

UN Millennium Project Task Force on Water and Sanitation, Final Report, Abridged Edition

Health, Dignity, and Development: What Will It Take?



MillenniumProject
Commissioned by the UN Secretary General and supported by the UN Development Group

SWEDISH
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Achieving the Millennium Development Goals

UN Millennium Development Goals

1. **Eradicate extreme poverty and hunger**
2. **Achieve universal primary education**
3. **Promote gender equality and empower women**
4. **Reduce child mortality**
5. **Improve maternal health**
6. **Combat HIV/AIDS, malaria and other diseases**
7. **Ensure environmental sustainability**
8. **Develop a global partnership for development**

A complete listing of the Goals and their related Targets
is found on the inside back cover.

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Health, Dignity, and Development: What Will It Take?

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Foreword

Long-term decision making in water—by all actors and at every level—should lead to sustainable use of the world's water resources, sustainable development of societies, and improved, dignified livelihoods for individuals.

The Millennium Development Goals (MDGs) help us to focus on the need for long-term considerations for our common future. They challenge us to seize the historic opportunity to reduce significantly by 2015 vicious cycles of global poverty, hunger, disease, illiteracy, environmental degradation and gender inequality. The MDGs are now the centerpiece of the global development agenda and show us a viable, justifiable path forward.

For each of the Millennium Development Goals, water is a key, since it is crucial to all forms of social and economic development and a necessity for nature's processes. The Millennium Project Task Force on Water and Sanitation and the Swedish Water House, which is administered by the Stockholm International Water Institute on behalf of the Government of Sweden, are thus pleased to collaborate in the publishing of this abridged version of *Health, Dignity and Development: What Will It Take?*

Like the full Final Report produced by the Task Force, this summary contributes greatly to the understanding of the broader water resources management actions needed to help achieve the Millennium Development Goals as a whole, and what must be done to achieve Target 10 and bring domestic water supply and sanitation to the billions lacking them.

The actions proposed in this report are based on sound principles and fundamental truths. They are decisive for the health of our planet and the quality of life of its inhabitants in the 21st century. It is a collective responsibility to implement them with the greatest urgency.

Anders Berntell
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Photo: SWI

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What will it take?

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Preface

At the United Nations Millennium Summit in September 2000, the largest-ever gathering of world leaders adopted the Millennium Declaration. From the Declaration emerged the Millennium Development Goals, an integrated set of time-bound targets for extending the benefits of globalization to the world's poorest citizens and making real progress, by 2015, in tackling the most pressing issues facing developing countries.

Among those targets is Millennium Development target 10: To cut in half, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation. In addition, sound water resources management and development is a key to achieving all of the Goals.

To help the international community as a whole reach the Millennium Development Goals, the UN secretary-general and the administrator of the UN Development Programme (as chair of the UN Development Group) commissioned the UN Millennium Project, as an independent advisory body. The UN Millennium Project was a three-year effort to identify the best strategies for meeting the Goals. Ten task forces, each one focused on a specific substantive area and made up of independent experts from the relevant disciplines and sectors, performed the bulk of the UN Millennium Project's work; each task force was responsible for identifying what it would take to achieve one or more of the targets.

The Task Force on Water and Sanitation focused primarily on how the world can join together to meet target 10. However, improving water resources management and development is also a critical factor for meeting the broader set of Goals—eradicating extreme poverty and hunger, achieving universal primary education, promoting gender equality and women's empowerment, reducing child mortality, improving maternal health, combating major diseases, and improving environmental sustainability. Thus, the report not only deals with improving sustainable access to domestic water supply and sanitation services, but also addresses—albeit briefly—the role of

Photo: Mats Larnerstad



Photo: Mats Larnerstad

sound water management and development in meeting the Millennium Development Goals as a whole.

This document, the abridged edition of the final report of the task force, provides an overview of our findings and recommendations. The analysis that brought us to this set of ideas, as well as all reference information, can be found in the full final report, which contains additional materials substantiating the principal arguments, but no change in the arguments themselves. The full report has 14 chapters in three parts: One that focuses on target 10, another that explores issues related to water as a resource for achieving the entire set of Millennium Development Goals, and a third that outlines the task force's recommendations regarding the actions needed at both national and international levels to meet the Millennium Development targets. This third part of the report also translates the overall recommendations into specific actions to be undertaken by key actors. The final report and this abridgement are intended primarily for the policy and technical communities concerned with the achievement of the Goals, particularly target 10, in governments, international organizations, bilateral donor agencies, specialized nongovernmental organizations, water agencies, and academia. We have sought to strike a balance between providing sufficient background information to make the report accessible to the nonexpert and maintaining a focus on what it will take to achieve the Goals.

While the report focuses primarily on the water and sanitation sectors, the task force recognizes that reforms in other areas will have a strong impact on the ability of countries to reach target 10 and to optimize water use. These issues are addressed in *Investing in Development: A Practical Plan to Achieve the Millennium Development Goals of the UN Millennium Project (2005)* – the final report of the UN Millennium Project – as well as in the reports of the other nine task forces.

What's new about this report?

In the past 25 years, a number of commissions, expert groups, and high-level panels have produced reports and recommendations on water and sanitation. Indeed, many task force members have themselves been involved in these valuable exercises, and in our work we have deliberately sought not to "reinvent the wheel," but rather to build on past efforts and ongoing processes.

The UN Millennium Project Task Force on Water and Sanitation, together with the larger UN Millennium Project of which it is an integral part, represented a unique opportunity to tackle two tasks that have heretofore not been undertaken: Identifying what it will take to meet the targets on water and sanitation, including pinpointing the actions needed in other sectors; and identifying the actions needed in the water resources sector to meet the Millennium Development Goals as a whole. In building on the excellent work of previous

bodies, the task force has brought two new dimensions to the table.

First, it has set out to answer a very different question from that addressed by previous initiatives: Given the urgency of achieving the Goals and the repeated international commitments to achieve them, what specific policies and resources are needed to meet the Goals, and who needs to take responsibility for ensuring they are in place?

Second, it has identified the specific policies and resources needed to meet the Goals as part of a larger UN Millennium Project. Therefore, the task force could not only determine the actions needed in the water sector within a broader context but also pinpoint the actions needed in other sectors if the targets on water and sanitation are to be met. This broad context is critical, given that advances in a number of areas—from poverty reduction to gender equality to improvements in the international terms of trade—strongly affect the ability of countries to meet the water and sanitation target and to optimize water use.

This approach thus represents a departure from past efforts to achieve goals in the sector, which were largely constrained by prevailing budgetary ceilings, and in which goals were not set within the context of overall development needs, but rather from the standpoint of water supply and sanitation. Other characteristics that differentiate the report include:

- Its ability to dovetail an action plan for water in the larger context of action plans to achieve the Millennium Development Goals.
- The authority and visibility that comes from its association with the UN Millennium Project.
- The intellectual independence that has been granted to the UN Millennium Project, as well as the analytical strength that derives from the project's overall framework and methodology.
- The overall international context of support for the Goals.

Definitions

Since the term water in the name of the task force embraces both domestic water supply (as in target 10) and water resources management, we attempt throughout the report to use terminology that clearly differentiates the term in each case. Thus, we employ the terms domestic water supply and sanitation services or simply water supply and sanitation when we refer to water and sanitation in the context of target 10. We use the terms water resources management, water as a resource, or simply water re-

sources when we refer to the management of water as a resource for meeting the Goals as a whole, including the infrastructure needed to manage the resource. We use the term water resources development and management to mean the infrastructure, governance, and management measures required to manage and control freshwater to meet human and environmental needs. We use the overall terms water or water and sanitation only when we explicitly wish to embrace both domestic water supply and water resources management. We define safe drinking water as water that is safe to drink and available in sufficient quantities for hygienic purposes. Our working definition of basic sanitation is the lowest-cost option for securing sustainable access to safe, hygienic, and convenient facilities and services for excreta and sullage disposal that provide privacy and dignity while ensuring a clean and healthful living environment both at home and in the neighborhood of users.¹



Photo: UNICEF/HQ00-0507/Radhika Chalasani

Note

1. These definitions of sustainable access to domestic water supply^{*} and basic sanitation are considerably broader than those used by the Joint Monitoring Programme for Water Supply and Sanitation (JMP), which is administered by the World Health Organization and the UN Children's Fund. The UN has charged the Joint Monitoring Programme with monitoring progress toward target 10. The JMP reports on coverage of improved versus unimproved water supply and sanitation. Throughout this report, when we discuss water supply and sanitation coverage, we are using JMP figures, because the JMP is the most comprehensive source of official data.

Acknowledgements

The ideas expressed here and in the full final report are the culmination of three years of analysis, consultation with others, and substantial debate and interchange among the members of the task force. Task force members met in Delhi, Nairobi, New York, and Stockholm from October 2002 to September 2004 and frequently exchanged views through numerous electronic discussions. The report draws heavily on the interim report prepared by the task force in December 2003 and incorporates the feedback received from various sources. It also incorporates material from several analyses that the task force commissioned in early 2004 with support from the government of Norway.

We are indebted to the Swedish Water House, which is administered by the Stockholm International Water Institute, for their generous support in publishing this abridged edition. Their financial assistance, coupled with the vision, dedication, and exceptional efforts of the Swedish Water House staff, particularly Johan Kuylenskierna, Dave Trouba and Stephanie Blenckner, made this edition possible.

The members of the task force have contributed actively and in their personal capacity to the work of the group, whose conclusions are embodied in this report. The views expressed do not necessarily reflect those of the organizations with which task force members are affiliated.

This report has been prepared by a small writing and editing team consisting of Kristen Lewis, senior policy advisor and task force manager, and ourselves. As task force coordinators, we wish to express a special appre-

ciation to Kristen Lewis, whose superb writing skills, ability to understand and communicate the big picture, capacity to address the very large number of issues raised by task force members and external reviewers on the various drafts of this report, and constant energy and enthusiasm have proved absolutely invaluable to task force members and ourselves alike. We also thank Christie Walkuski for her generous assistance in the preparation of the report, including the annexes and figures, with unfailing good humor under significant time pressure, and for her consistent support to the task force throughout the entire project. This edition and the full final report were edited by Bruce-Ross Larson, Meta de Coquereumont, Carol Rosen, Christopher Trott, and Elaine Wilson of Communications Development.

We also wish to acknowledge, with thanks, the extensive contributions of several people and organizations to the development of this report. In particular, we would like to thank Guido Schmidt-Traub of the UN Millennium Project for his contributions on the project's needs assessment methodology, as well as for his gracious, unflagging, and truly invaluable support throughout the life of the task force; Jennifer Davis, task force member, for her work to devise the community typology outlined in the report and her extensive contributions; Michael Krause and Alice Wiemers of the UN Millennium Project Secretariat for assistance in data analysis; Adam Storeygard and Marc Levy of CIESIN for their assistance in the preparation of maps; and Anupa Fabian for a heroic marathon of fact-checking in the final days. In addition, we greatly appreciated the contributions of the UN Human Settlements Programme, the UN Department of Economic and Social Affairs, the UN Development Programme, the UN Environment Programme, the UN Children's Fund, the World Bank, and the World Health Organization, whose documents we drew on extensively in several parts of this report and whose staff assisted us in numerous ways. Finally, the report could not have been written without the task force members and other key contributors listed in the preceding pages: Their tremendous efforts, wealth of knowledge and expertise, personal dedication to the issues, and commitment to creating a consensus document made our work together deeply rewarding. The coordinators take full responsibility for any errors or omissions in the contents of this report.

Roberto Lenton and Albert Wright
Task force coordinators



Photo: Mats Jannerstad

Executive summary

Four out of every ten people in the world do not have access to even a simple pit latrine; and nearly two in ten have no source of safe drinking water. This silent humanitarian crisis kills some 3,900 children every day; thwarts progress toward all the Millennium Development Goals, especially in Africa and Asia; and robs the poorest—particularly women and girls—of their health, time, and dignity. Water supply and sanitation services, as well as water as a resource, are critical to sustainable development—from environmental protection and food security to increased tourism and investment, from the empowerment of women and the education of girls to reductions in productivity losses due to morbidity and malnutrition.

The UN Millennium Project Task Force on Water and Sanitation sought to answer two questions: What will it take to expand water supply and sanitation coverage dramatically and sustainably? How can the use of water as a resource be optimized to achieve the Millennium Development Goals?

At the conclusion of its three-year project, the task force was unanimous in its belief that the water and sanitation target, “to cut in half, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation,” will not be reached unless:

- There is a **deliberate commitment** by donors to increase and refocus their development assistance and to target sufficient aid to the poorest low-income countries.
- There is a **deliberate commitment** by governments of middle-income countries that do not depend on aid to reallocate their resources so that they target funding to their unserved poor.
- There are **deliberate activities** to create support and ownership for water supply and sanitation initiatives among both women and men in poor communities.
- There is a **deliberate recognition** that basic sanitation in particular requires an approach that centers on community mobilization and actions that support and encourage that mobilization.

Photo: WHO/P. Virat

What will it take?

Furthermore, our group is convinced that the Millennium Development Goals as a whole will not be met unless:

- There is **deliberate planning and investment** in sound water resources management and infrastructure.

The task force identified ten critical actions for achieving the water and sanitation target and fostering the sound management of water resources for all the Goals. They are:

- Action 1.** Governments and other stakeholders must move the sanitation crisis to the top of the agenda.
- Action 2.** Countries must ensure that policies and institutions for water supply and sanitation service delivery, as well as for water resources management and development, respond equally to the different roles, needs, and priorities of women and men.

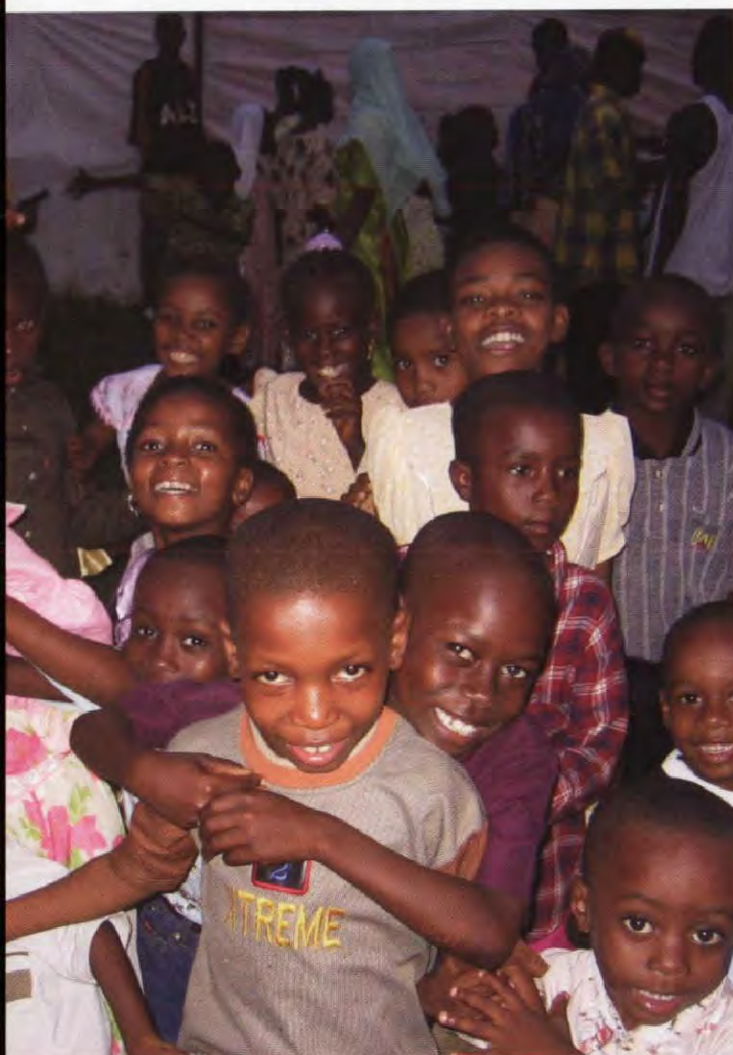


Photo: Frida Lönshammur

- Action 3.** Governments and donor agencies must simultaneously pursue investment and reforms.
- Action 4.** Efforts to reach the water and sanitation target must focus on sustainable service delivery, rather than construction of facilities alone.
- Action 5.** Governments and donor agencies must empower local authorities and communities with the authority, resources, and professional capacity required to manage water supply and sanitation service delivery.
- Action 6.** Governments and utilities must ensure that users who can pay do pay to fund the operation, maintenance, and expansion of services—but they must also ensure that the needs of poor households are met.
- Action 7.** Within the context of national poverty reduction strategies based on the Millennium Development Goals, countries must elaborate coherent water resources development and management plans that will support the achievement of the Goals.
- Action 8.** Governments and their civil society and private sector partners must support a wide range of water and sanitation technologies and service levels that are technically, socially, environmentally, and financially appropriate.
- Action 9.** Institutional, financial, and technological innovation must be promoted in strategic areas.
- Action 10.** The United Nations system organizations and their member states must ensure that the UN system and its international partners provide strong and effective support for the achievement of the water supply and sanitation target and for water resources management and development.



Photo: SIWI

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Water is life

Water is life for people and for the planet. It is essential to the well-being of humankind, a vital input to economic development, and a basic requirement for the healthy functioning of all the world's ecosystems. Clean water for domestic purposes is essential for human health and survival; indeed, the combination of safe drinking water, adequate sanitation, and hygienic practices like hand-washing is recognized as a precondition for reductions in morbidity and mortality rates, especially among children.

Water is also critical to other facets of sustainable development—from environmental protection and food security to increased tourism and investment, from the empowerment of women and the education of girls to reductions in productivity losses due to illness and malnutrition. Thus, increasing access to domestic water supply and sanitation services and improving water resources management are catalytic entry points for efforts to help developing countries fight poverty and hunger, safeguard human health, reduce child mortality, promote gender equality, and manage and protect natural resources. In addition, sufficient water for washing and safe, private sanitation facilities are central to the basic right of every human being for personal dignity and self-respect.

For the world's poorest citizens, however, the right to safe water and adequate sanitation remains a promise unfulfilled. At least 1.1 billion people lack access to safe water, and 2.6 billion lack access to basic sanitation, a silent humanitarian crisis that each day takes thousands of lives, robs the poor of their health, thwarts progress toward gender equality, and hamstring economic development, particularly in Africa and Asia (WHO/UNICEF JMP 2000).

Every year millions of people, most of them children, die from diseases associated with inadequate water supply, sanitation, and hygiene (WHO 2004). According to the World Health Organization, each and every day some 3,900 children die because of dirty water or poor hygiene; diseases transmitted through water or human excrement are the second-leading cause of death among children

worldwide, after respiratory diseases (WHO 2003). Water scarcity, poor water quality, and inadequate sanitation negatively impact food security, livelihood choices, and educational opportunities for poor families across the developing world. The current gulf in water use between rich and poor countries is wide—people in industrialized countries use thirty to fifty times more water than people in developing countries (UN/WWAP 2003). Yet, although far more people suffer the ill effects of poor water supply and sanitation services than are affected by headline-grabbing topics like war and terrorism, those issues capture the public imagination—as well as public resources—in a way that water and sanitation issues do not.

Water challenges will increase significantly in the coming years. Continuing population growth and rising incomes will lead to greater water consumption, as well as more waste. The urban population in developing countries will grow dramatically, generating demand well beyond the capacity of already inadequate water supply and sanitation infrastructure and services. By 2050, at least one in four people is likely to live in a country affected by chronic or recurring shortages of freshwater (UN/WWAP 2003). This may seriously constrain the availability of water for all purposes—particularly for agriculture, which currently accounts for 70 percent of all water consumed (UN/WWAP 2003).

The world is waking up to the water and sanitation crisis. At the United Nations Millennium Summit in September 2000, the largest-ever gathering of world leaders adopted the Millennium Declaration; from the Declaration emerged the Millennium Development Goals, an integrated set of time-bound targets for extending the benefits of globalization to the world's poorest citizens (UN Millennium Project website). Among them was target 10, to cut in half the proportion of people without sustainable access to safe drinking water (box 1.1). At the World Summit for Sustainable Development in 2002, this target was expanded to include basic sanitation, and water as a resource was recognized as a critical factor for meeting all the Goals (WSSD website).

Box 1.1 Millennium Development target 10

To halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.

Why focus on water supply and sanitation?

Given the myriad development challenges facing the world's poorest countries and communities—from the HIV/AIDS pandemic to pervasive gender inequality to grinding poverty—why has halving the proportion of people without sustainable access to safe drinking water and basic sanitation services been singled out as critical? Arguments in support of expanding access to water supply and sanitation services have been expressed in the language of human values, founded on the notion of human rights to basic services, and framed in terms of health and economic benefits. Although based in different traditions, each argument leads to the same exhortation: we must act to ensure that access to basic water supply and sanitation becomes a reality for poor households around the world (box 1.2). Indeed, water supply and sanitation advocates, policymakers, and practitioners should draw encouragement from the fact that a compelling, multifaceted case for action can be made to a range of key constituencies that must respond to achieve target 10.

Box 1.2 Modest dreams

"At least my daughter's education will ensure that she will get a groom who comes from a home with a toilet."

—*Manjulaben, age 38, a daily wage laborer from Nagalpur village, Gujarat state, India.*

"I do wish that I get married in a family which has the facility of toilet and separate water tap. It is a dream for me."

—*Barkha, age 12, Sanjay Amar Colony, Delhi, India.*

Source: UN-HABITAT 2004.

With regard to human values, expanding access to water and sanitation is a moral and ethical imperative rooted in the cultural and religious traditions of societies around the world. Virtually all of the world's spiritual and cultural systems embody values and imperatives recognizing the primacy of human dignity, equity, compassion, and solidarity. At least in principle, they exhort us to care about the welfare of others, especially the poor. Around the world, these principles have formed the basis of action for volunteer, nonprofit, and religious organizations—often operating on a shoestring budget, hope, and commitment—that extend water supply and sanitation services to poor households (box 1.3).

Box 1.3 How long are we going to live this way?

"There is no water to wash our hands when we use the nearby bushes, plastic bags, or the only public toilet available some distance from our homes. There is always fighting on who will be next although there is a queue. Everyone watches. There are no doors for privacy. How long are we going to live this way? It is affecting our pride and dignity.

"Sometimes we have to go to the back of our house to defecate in a plastic bag and throw it in nearby bushes or in the gully—this is called "kitting." The problem gets worse during menstruation both for us and our daughters—they too can't attend school as there is nowhere at school for them to clean themselves, and we the mothers don't have enough water to wash our bodies and to feel clean.

"We don't want our children to continue growing up this way—it is too distressing. Life like this will make it hard for our children to fit into society. My daughter would like to be a classy lady one day—she would love to marry someone who has their own sanitary convenience in their homes."

—*Charlene, age 42, Caribbean urban slum.*

Source: UN-HABITAT 2004.

Many of the most effective interventions at the community level meld economic and social development with spiritual growth and bonds of communal solidarity. They also clearly balance rights on the one hand with responsibilities on the other; indeed, experience has shown that the most sustainable community-level interventions are characterized by significant community investment of labor, other in-kind resources, and user fees in the design, construction, maintenance, and operation of facilities. The Millennium Development Goals themselves are built around a shared understanding of what we as human beings owe to one another and are informed by principles of fairness, justice, and the obligation of the individual to pursue the mutual good that characterizes religious and ethical systems the world over.

These shared principles are echoed in the recent affirmation by the United Nations of the Right to Water (November 26, 2002)—a right that is "indispensable for leading a life in human dignity" and "a prerequisite for the realization of other human rights." Through its General Comment 15, the Committee on Economic, Social, and Cultural Rights of the United Nations Economic and Social Council stated that "the human right to water entitles everyone to sufficient, safe, acceptable, physically accessible, and affordable water for personal and domestic uses." While the right to water has been implicit in the



Photo: Mats Lomnerstad

rights to health, housing, food, life, and dignity already enshrined in other international conventions, General Comment 15 is the first to focus explicitly on the right to water and the responsibilities that governments have in delivering clean water and adequate sanitation services to all (ECOSOC 2002).

The importance of safe drinking water and basic sanitation to the preservation of human health, particularly among children, cannot be overstated. Water-related diseases are the most common cause of illness and death among the poor of developing countries. According to the World Health Organization, 1.6 million deaths per year can be attributed to unsafe water, poor sanitation, and lack of hygiene (WHO 2004). Realizing the health-related Goals, particularly those targeting child mortality and major diseases, will require a dramatic increase in access to safe drinking water and basic sanitation services for poor women, men, and children in developing countries. It will also require changes in behavior and attitudes, particularly with regard to hygiene, a critical but often overlooked element in discussions usually dominated by questions of access and service provision.

Finally, improving access to water supply and sanitation is justified on a variety of economic grounds. Households with improved services suffer less morbidity and mortality from water-related diseases and can reduce their expenditures on treatment (box 1.4). Girls and women, especially, have greater educational and productive opportunities when water and sanitation facilities are located nearby, because they can safeguard their privacy in school and save time spent fetching water. The ready availability of water can be used to start or expand small enterprises and thus increase disposable household income. At the national level, improvements in water supply and sanitation coverage can mean reduced expenditures on health care, increased demand for agricultural products, and greater domestic and international tourism.

A recent cost-benefit analysis by the World Health Organization found that achieving the global Millennium Development target on water and sanitation would bring substantial economic gains: each \$1 invested would yield an economic return of between \$3 and \$34, depending on the region. The benefits would include an average global reduction of 10 percent in diarrheal episodes. If the global water and sanitation target is met, the health-related costs avoided would reach \$7.3 billion per

year, and the annual global value of adult working days gained because of less illness would rise to almost \$750 million. Better services resulting from the relocation of a well or borehole to a site closer to user communities, the installation of piped water supply in houses, and latrines closer to home yield significant time savings. The annual value of these time savings would amount to \$64 billion if the target is met.

The total benefits of such service improvements will vary across regions, as they depend on the existing levels of water supply and sanitation coverage and the region-specific levels of morbidity and mortality due to diarrheal diseases. Regions where the number of unserved is high and the diarrheal disease burden significant would realize the greatest benefits from improved services. (A summary of the WHO report is available at www.who.int/water_sanitation_health/en/execsummary.pdf.)



Photo: WaterAid

Why do water resources management and development matter?

Water as a resource is an essential ingredient to virtually all the Millennium Development Goals. Although the Goals and their related targets focus principally on ends rather than means and therefore do not explicitly recognize the importance of water for food security or environmental sustainability, good water management and development will be essential to meeting the MDGs as a whole. Moreover, efforts to make the Goals a reality on the ground will require mitigation of potentially negative effects on many water resources and reconciliation of potentially conflicting demands on the same water resources (box 1.5).

Water as a resource for agriculture, energy, transport, and industry is essential to fighting poverty and hunger. Water is an important factor of production in a variety of industries crucial to economic development and poverty reduction; it is also central to the livelihood systems of the rural poor.

Box 1.4 Health costs of inadequate water supply and sanitation services

- Half the people in the developing world are suffering from one or more of the main diseases associated with inadequate provision of water supply and sanitation services: diarrhea, ascariis, dracunculiasis (guinea worm), hookworm, schistosomiasis (bilharzias, or snail fever), and trachoma.
- More than half the hospital beds in the world are filled with people suffering from water-related diseases.
- The trauma of watching a much loved young child die from a preventable, water-related disease like diarrhea, as do one in five in the poorest pockets of the world, no doubt has serious and lasting impacts on the psychological and emotional health of surviving parents and siblings.
- Some 6 million people worldwide are blind because of trachoma, and more than 150 million people are in need of treatment. It is the leading cause of preventable blindness. The disease is strongly related to overcrowding and the absence of nearby sources of safe water for washing the face and hands. Improving access to safe water sources and better hygiene practices can reduce trachoma morbidity by 27 percent.

Source: UN/WWAP 2003; WHO 2004.

Box 1.5 Water resources management and development

- Almost 2 billion people were affected by natural disasters in the last decade of the twentieth century, 86 percent of them by floods and droughts.
- Flooding frequently leads to contamination of drinking-water systems with human excreta from inadequate sanitation and with refuse and industrial waste from dumps.
- Droughts cause the most illness and death, not only by limiting adequate water supply but also by triggering and exacerbating malnutrition and famine.
- Droughts and floods have broad economic impact: the Zimbabwe drought of the early 1990s was associated with an 11 percent decline in GDP; the recent floods in Mozambique led to a 23 percent reduction in GDP; and the drought of 2000 in Brazil cut projected economic growth in half.
- Water infrastructure and sound water resources management can spur rural development. In Petrolina, in Northeast Brazil, water resources management and development has created a large number of high-quality, permanent agricultural jobs (40 percent of which are held by women). For every job in agriculture, two jobs have been created in the supporting commercial and industrial sectors. These opportunities have reversed the historic pattern of outmigration.
- Experience has shown that cooperative programs for water resources management have played an important role in regional integration and stability in Eastern Europe (the Baltic Sea), Southeast Asia (Thailand and Laos), and South Asia (the Indus Basin).
- Irrigation and drainage have contributed to past success in doubling food production, forestalling famine, and reducing global food prices. Globally, irrigated areas represent 17 percent of the cultivated area, but account for 40 percent of food production. In India, districts with little irrigation have a poverty incidence 2.5 higher than those with substantial irrigation.

Source: WHO 2004 and World Bank 2003.

Three points of connection between poor people and their water environment stand out: health, livelihoods, and vulnerability.

- **Health.** The health of poor women and men is disproportionately affected by contaminated water and poor sanitation services, setting up a cycle of ill-health and further impoverishment that has severe financial and personal costs.
- **Livelihoods.** In rural areas, poor people's livelihood systems are rooted in the natural world and depend upon ecosystem health. Contamination of common property resources, like lakes, rivers, and coastal areas, directly translates into less food, income, and time for the poor. Common property resources provide a significant share of food and household income for the poorest families.
- **Vulnerability.** Vulnerability is a critical dimension of poverty. Poor women and men are particularly at risk from environmental shocks and crises. Increasingly frequent and severe natural disasters (cyclones, hurricanes, floods, landslides, and droughts), as well as changes in rainfall patterns, shifting agricultural zones, and rising sea levels impact developing countries and the poor who live there disproportionately. The poor are the most affected by environment-based conflicts, which

are also becoming more frequent. Extreme events can have a strong impact on the ability of many developing countries, especially in the tropics, to achieve the Millennium Development Goals. Damage caused by floods and droughts and other extreme climate events can undo in a short period many years of steady development and growth.

Conclusion

Table 1.1 illustrates the ways in which domestic water supply and sanitation services as well as sound water management contribute to the achievement of the full set of Millennium Development Goals.

Dramatically expanding coverage of water supply and sanitation services can promote human health, economic development, gender equality, and environmental sustainability and thus deserves the vigorous response of national governments and the international community. Improving basic services for the world's poor is also an imperative for a global community committed to principles of equity, fairness, and social responsibility. Without greater attention to the sound management and development of water resources, it will be difficult to meet the Millennium Development Goals and sustain the gains already made against poverty, hunger, and environmental degradation.



Photo: Mats Lannerstad

MDGs and relevant Targets	Contributions of domestic water supply and sanitation	Contributions of sound water resources management and development
Poverty To halve the proportion of the world's people whose income is less than \$1/day	<ul style="list-style-type: none"> Household livelihood security rests on the health of its members; adults who are ill themselves or who must care for sick children are less productive. Illnesses caused by unsafe drinking water and inadequate sanitation generate health costs that can claim a large share of poor households' income. Time spent collecting water cannot be used for other livelihood activities. 	<ul style="list-style-type: none"> Water is a factor of production in agriculture, industry and other economic activities that provide livelihoods for poor people. Investments in water infrastructure can be a catalyst for local/regional development. Reduced ecosystem degradation and reduced vulnerability to water-related disasters make livelihood systems of the poor more secure.
Hunger To halve the proportion of the world's people who suffer from hunger	<ul style="list-style-type: none"> Healthy people are better able to absorb the nutrients in food than those suffering from water- and sanitation-related diseases, particularly worms, which rob their hosts of calories. 	<ul style="list-style-type: none"> Water is a direct input to irrigation for expanded grain production. Reliable water is necessary for subsistence agriculture, home gardens, livestock, tree crops. Fish, nuts, and other foods gathered in common property resources depend upon quality and quantity of water in ecosystems. Cheaper food prices reduce urban hunger.
Primary Education To ensure that children everywhere complete a full course of primary schooling	<ul style="list-style-type: none"> Improved WSS services relieve girls from water fetching duties, allowing them to attend school. Reduced WSS-related illness, including injuries from water-carrying, improve school attendance, especially for girls. Having separate sanitation facilities for girls in schools increases their school attendance, especially after menarche. 	<ul style="list-style-type: none"> Improved water management reduces the incidence of catastrophic events like floods that interrupt educational attainment.
Gender Equality To ensure that girls and boys have equal access to primary and secondary education	<ul style="list-style-type: none"> Reduced time, health, and care-giving burdens from improved water services give women more time for productive endeavors, adult education, empowerment activities, leisure. Water and sanitation facilities closer to home put women and girls at less risk for sexual harassment/assault while gathering water and searching for privacy. Higher rates of child survival are a precursor to the demographic transition to lower fertility rates; having fewer children reduces women's household responsibilities and increases their opportunities for personal development. 	<ul style="list-style-type: none"> Community-based organizations for water management can improve social capital of women by giving them leadership and networking opportunities and building solidarity among them.

Table 1.1 Selected examples of the ways in which domestic water supply and sanitation and water resources management and development contribute to the Millennium Development Goals and Targets

MDGs and relevant Targets	Contributions of domestic water supply and sanitation	Contributions of sound water resources management and development
Child Mortality To reduce by two-thirds the death rate for children under five	<ul style="list-style-type: none"> Improved sanitation, safe drinking water sources, and greater quantities of domestic water for washing reduce infant and child morbidity and mortality. Sanitation and safe water in health-care facilities help ensure clean delivery and reduce neonatal deaths. Mothers with improved WSS services are better able to care for their children, both because they have fewer illnesses and because they devote less time to water fetching and seeking privacy for defecation. 	<ul style="list-style-type: none"> Improved nutrition and food security reduces susceptibility to diseases. Well-managed water resources help poor people make a decent living and reduce their vulnerability to shocks, which in turn gives them more secure and fruitful livelihoods to draw upon in caring for their children. Malaria is a leading cause of death among children, and better water management reduces mosquito habitats.
Maternal Mortality To reduce by three-fourths the rate of maternal mortality	<ul style="list-style-type: none"> Accessible sources of water reduce labor burdens and health problems resulting from water portage, reducing maternal mortality risks. Improved health and nutrition reduce susceptibility to anemia and other conditions that affect maternal mortality. Safe drinking water and basic sanitation are needed in health-care facilities to ensure basic hygiene practices following delivery. Higher rates of child survival are a precursor to the demographic transition toward lower fertility rates, and fewer pregnancies per woman reduce maternal mortality. 	<ul style="list-style-type: none"> Improved nutrition and food security reduces susceptibility to diseases that can complicate pregnancy. Malaria is particularly dangerous to pregnant women, and better water management reduces mosquito habitats.
Major Disease To halt and begin to reverse the spread of HIV, malaria, other major diseases	<ul style="list-style-type: none"> Safe drinking water and basic sanitation help prevent water-related diseases, including diarrheal diseases, schistosomiasis, filariasis, trachoma, and helminthes. 1.6 million deaths per year are attributed to unsafe water, poor sanitation, and lack of hygiene. Improved water supply reduces diarrhea morbidity by 21%; improved sanitation reduces diarrhea morbidity by 37.5%; handwashing can reduce the number of diarrheal cases by up to 35%; additional improvements in drinking water quality, such as point-of-use disinfection, would reduce diarrheal episodes by 45%. 	<ul style="list-style-type: none"> Improved water (and wastewater) management in human settlements reduces transmission risks of mosquito-borne illness like malaria and dengue fever. 1.2 million people die of malaria each year, 90% of whom are children under 5. Improved health and nutrition reduce susceptibility to/severity of HIV/AIDS and other major diseases.
Environmental Sustainability To stop the unsustainable exploitation of natural resources Slum Dwellers To improve the lives of 100 million slum dwellers	<ul style="list-style-type: none"> Adequate treatment and disposal of excreta and wastewater contribute to less pressure on freshwater resources. Improved sanitation reduces flows of human excreta into waterways, helping to protect human and environmental health. Inadequate access to safe water and inadequate access to sanitation and other infrastructure are two of the five defining characteristics of a slum. 	<ul style="list-style-type: none"> Improved water management, including pollution control and water conservation, is a key factor in maintaining ecosystems integrity. Integrated management within river basis allows for approaches that preserve ecosystem health. Slum settlements are often built on sites particularly vulnerable to water-related disasters.

2

Achieving the Millennium Development target for water supply and sanitation

Target 10 requires reducing by half the proportion of the population without safe drinking water and basic sanitation between the baseline year of 1990 and the target year of 2015. It is a huge challenge, particularly for sanitation. According to the latest report of the WHO/UNICEF Joint Monitoring Programme, meeting the sanitation target globally will require that an additional 1 billion people in cities and 900 million people in rural areas gain access to basic sanitation services (WHO/UNICEF JMP 2004).

Important as it is, however, the global target matters less than the national targets set by individual countries. Significant progress in China and India alone, for instance, could achieve the global target—without there being any progress at all in Sub-Saharan Africa. To reach those in greatest need, what matters is massive country-by-country expansions of service into unserved remote rural areas and densely populated urban slums. Such dramatic and unprecedented service expansion will require, first, identifying the regions, countries, and communities most in need; second, analyzing the obstacles to expanding access in those areas; and third, devising the most promising strategies for overcoming those obstacles. This chapter deals with each of these subjects in turn.

Who are the unserved?

Although wealth is generally associated with access to improved water supply and sanitation services, it is not the case that all of the unserved live in the world's poorest countries. Some very poor countries are making rapid progress,¹ and a substantial proportion of unserved households are located in middle-income countries. As a result, the strategies for mobilizing resources, developing capacity, and involving actors from the local to the international level will be quite different between these two groups of countries.

Photo: David Dahmén

	Living in low-income countries	Living in middle-income countries	Total
Living below the poverty line	320	96	416
Living above the poverty line	30	259	289
Total	350	355	705

Table 2.1 Distribution of the global population without access to safe water supply. Figures in millions.

	Living in low-income countries	Living in middle-income countries	Total
Living below the poverty line	540	93	633
Living above the poverty line	565	730	1295
Total	1,105	823	1,928

Table 2.2 Distribution of the global population without access to basic sanitation. Figures in millions.

As tables 2.1 and 2.2 show, the target group of unserved people living below the poverty line in low-income countries by no means represents the majority of the unserved, especially for sanitation.² However, it is the target group most likely to be left behind if appropriate financial strategies are not urgently developed to reach them.

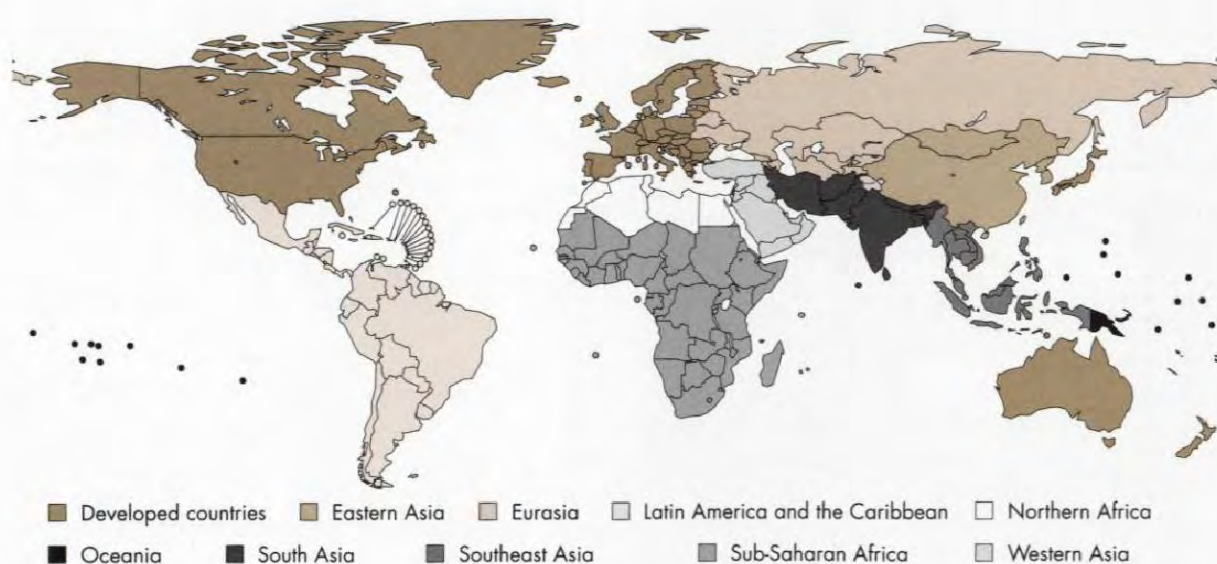
Where are the needs greatest?

Countries and regions vary widely in their water and sanitation coverage and their rates of progress toward

meeting target 10. The following sections briefly describe some of these regional and national differences.

Regional differences in water and sanitation coverage rates

The 2004 WHO/UNICEF Joint Monitoring Programme report (WHO/UNICEF JMP 2004) describes regional coverage (as in map 2.1) for both improved drinking water and improved sanitation in the baseline year of 1990 and in 2002, which is the halfway point for the 2015 targets.



Map 2.1 Regional groupings for the Joint Monitoring Programme, Source: WHO/UNICEF JMP 2004.

In 2002, about 1.1 billion people of the world's 6.2 billion population (18 percent) lacked access to improved water supply, and about 2.6 billion people (42 percent) had no access to even the most basic forms of improved sanitation, as shown in tables 2.3 and 2.4 (WHO/UNICEF JMP 2004). Drinking water coverage rates were lowest

in Oceania (52 percent) and in Sub-Saharan Africa (58 percent). In absolute numbers, however, most of the 1.1 billion without access to improved drinking water sources lived in Asia (61 percent), and 26 percent lived in Sub-Saharan Africa.

Region	Number of people in region lacking access (millions)	Share of regional population lacking access (percent)	Share of all unserved living in indicated region (percent)
Eastern Asia	303	22%	28%
Sub-Saharan Africa	288	42%	27%
South Asia	234	16%	2%
Southeast Asia	115	21%	11%
Latin America & Caribbean	60	11%	6%
Western Asia	23	12%	2%
Eurasia	20	7%	2%
Northern Africa	15	10%	1%
Developed economies	15	2%	1%
Oceania	3	48%	<1%
TOTAL	1,076	na	100%

Table 2.3 Access to improved drinking water sources by region, 2002
Source: Adapted from WHO/UNICEF JMP 2004.

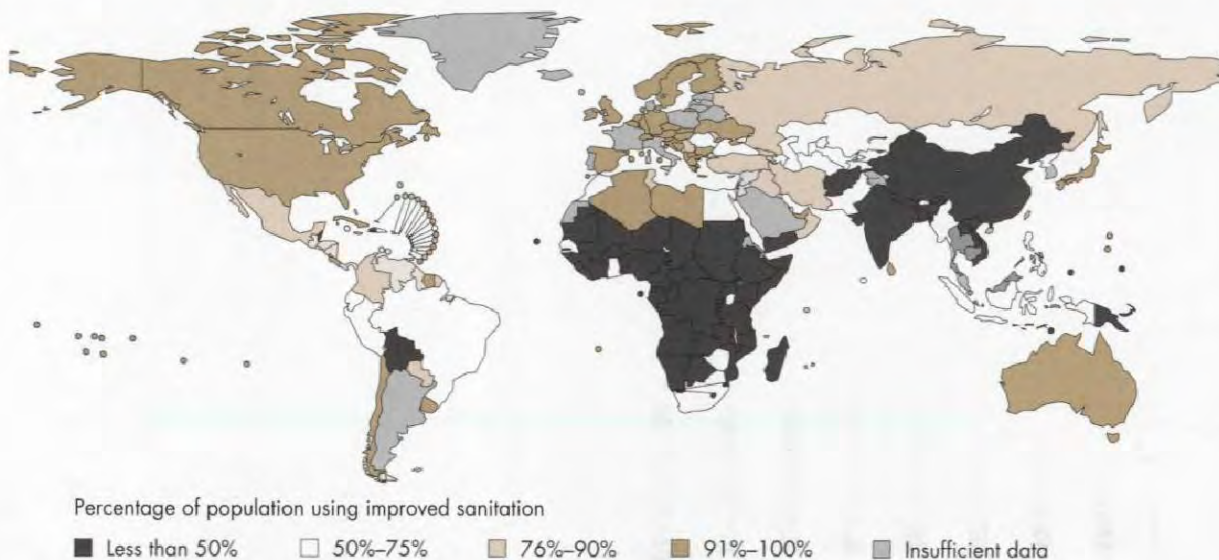
Region	Number of people in region lacking access (millions)	Share of regional population lacking access (percent)	Share of all unserved living in indicated region (percent)
South Asia	938	63%	36%
Eastern Asia	779	55%	29%
Sub-Saharan Africa	437	64%	17%
Southeast Asia	208	39%	8%
Latin America & Caribbean	137	25%	5%
Eurasia	50	17%	2%
Northern Africa	40	27%	2%
Western Asia	38	21%	1%
Developed economies	20	2%	1%
Oceania	3	45%	<1%
TOTAL	2,620		100%

Table 2.4 Access to improved sanitation by region, 2002
Source: Adapted from WHO/UNICEF JMP 2004.

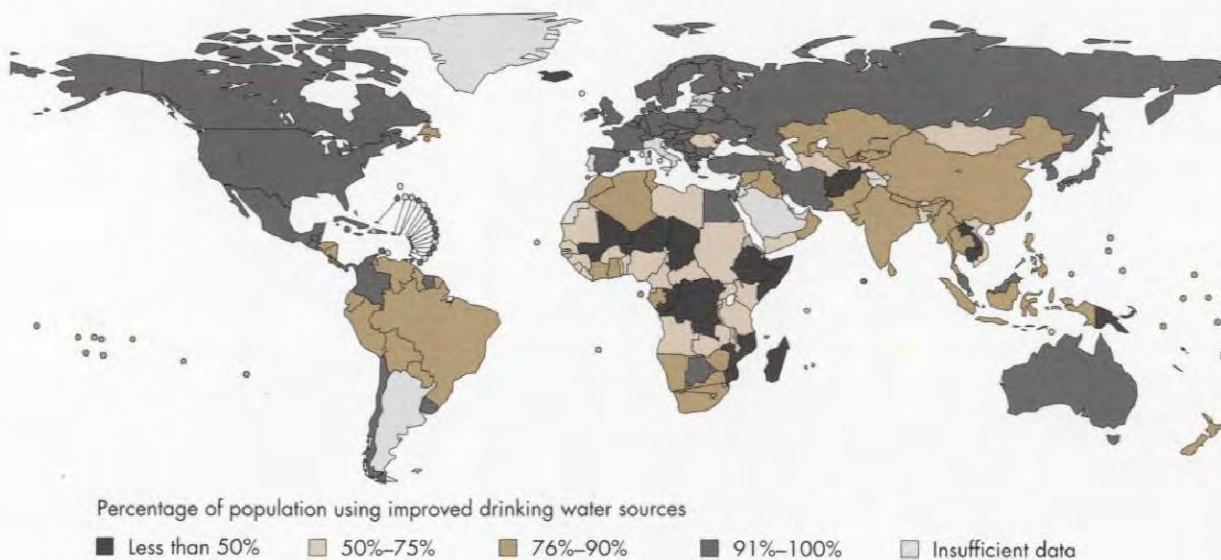
Sanitation coverage was lowest in Sub-Saharan Africa (36 percent) and in South Asia (37 percent). Most of those without access to improved sanitation lived in Asia (73 percent), while 17 percent lived in sub-Saharan Africa. Over half of those without access to improved sanitation—nearly 1.5 billion people—live in just two countries, China and India.

National differences in water and sanitation coverage rates
For most developing countries, expanding sanitation coverage presents a far greater challenge than expand-

ing water supply coverage (*map 2.2*). The majority of nations in Sub-Saharan Africa, as well as in several Asian subregions, have more than half of their populations unserved; more than one quarter of the citizens in several Latin American and Caribbean nations lack access to improved sanitation as well. Among those 27 countries with the very lowest rates of coverage—those in which no more than one third of residents have access to improved sanitation—the majority (18) are in Sub-Saharan Africa, followed by Asia (6).



Map 2.2 Access to improved sanitation, 2002, Source: WHO/UNICEF JMP 2004.



Map 2.3 Access to improved water supply, 2002, Source: WHO/UNICEF JMP 2004.

Most of the countries in which a substantial proportion of the population lacks access to improved water supply are in Sub-Saharan Africa (map 2.3). Indeed, of the 25 countries that the Joint Monitoring Programme has identified as lagging behind in their progress toward the Millennium Development targets for water supply and sanitation, 13 are in Sub-Saharan Africa and 4 are in Asia. Those two regions will need considerable attention to make the dream of universal access to improved water supply a reality.

Subnational differences in water and sanitation coverage rates

Within countries, areas with the lowest rates of access to improved water supply and improved sanitation tend to

access to improved sanitation in rural areas, compared with 73 percent in urban areas (figure 2.1).

Seventy percent of rural residents and 92 percent of urban residents use improved water supplies in developing countries. This disparity is greatest in Sub-Saharan Africa, where only 45 percent of rural residents have access to improved water supply, compared with 82 percent of urban residents.

Across all countries, those who lack access are almost always among the poorest of households. The 2004 WHO/UNICEF Joint Monitoring Program data suggest that those whose income is in the top 20 percent nationally are twice as likely to have access to improved water supply and four times as likely to have access to improved sanitation, than those in the bottom 20 percent. Because

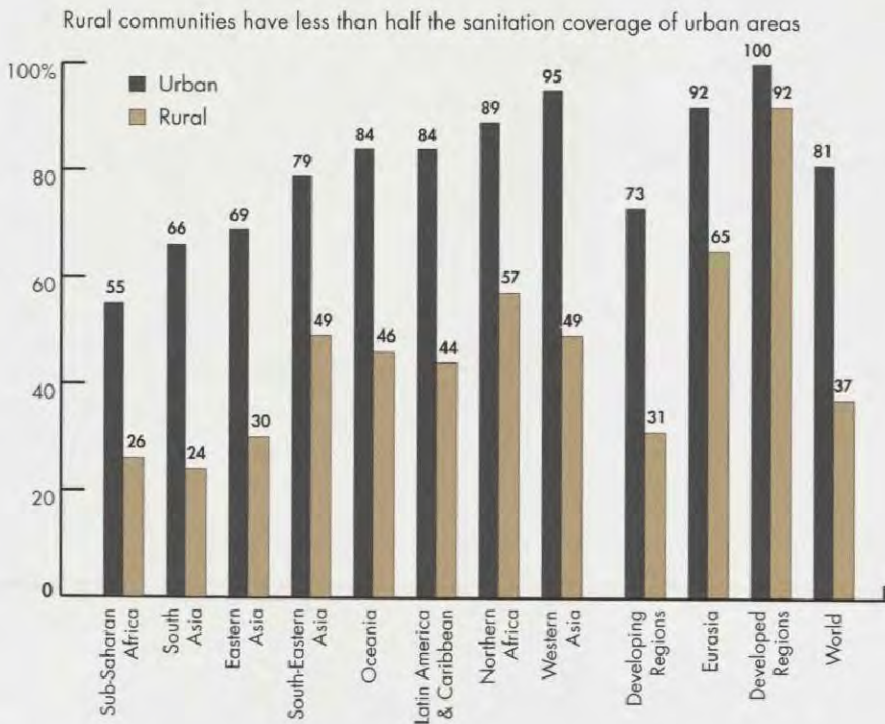


Figure 2.1 Access to sanitation in urban and rural areas, 2002
Source: WHO/UNICEF JMP 2004.

be rural areas, congested urban slum areas, and squatter settlements—anywhere the poor live. Disparities are particularly marked between rural and urban areas. Although sector experts agree that urban access figures are sometimes overly optimistic, the disparities between rural and urban coverage are nonetheless significant.

With respect to sanitation, the Joint Monitoring Program estimated that, in 2002, almost 2 billion rural dwellers in developing countries lacked access to improved sanitation; for urban areas, the number of unserved was 560 million. In developing regions, only 31 percent have

they are drawn primarily from the ranks of the poor, those without access to improved water supply and sanitation lack a political voice in priority-setting and resource allocation within countries.

What's holding us back?

To understand how to move forward to meet the Millennium Development Goals, it is first necessary to understand the obstacles that have constrained progress. Clearly, the explanations vary across communities, countries, and regions, but a common set of political, financial, institutional, and technical



Photo: Carlos Mancin/Heraldo de Aragón

challenges confronts most developing countries in their quest to expand water supply and sanitation services.

Political constraints

One of the chief constraints to expanding water supply and sanitation coverage is the lack of political will, by which we mean an absence of political leadership and government commitment to allocating sufficient national resources to the sector and to undertaking the reforms necessary to improve performance and attract investment. There are many underlying reasons for a lack of political will. For decisionmakers in finance ministries, for example, investments in water supply and sanitation are perceived as having lower returns than funds spent in other sectors (for example, on roads or energy). Another reason is the failure of technical specialists, civil society actors, and others to make a compelling case to decisionmakers concerning the social and economic benefits of access to water supply and sanitation services.

The capture of water and sanitation planning and institutional processes by powerful political interests also acts as a barrier to service expansion. The kinds of changes needed to prioritize improved water supply and sanitation services to poor households often threaten status quo arrangements that confer substantial benefits on politically influential groups. For instance, well-off urban communities with piped water have a vested interest in maintaining current conditions. They benefited from publicly financed infrastructure in the past, often still benefit from consumption subsidies, and tend to oppose using public financing to expand services to the poor or reallocating subsidies to those who really need them.

The resistance that often emerges can be difficult to overcome, particularly when vested interests exploit the plight of the unserved to argue against policy or institutional reforms. Building broad-based, informed coalitions, ideally led by an influential political champion, is critical for mounting initiatives that prioritize the poor and redirect resources toward low-income households.

Indeed, information can be one of the most effective tools for overcoming political resistance. Decisionmakers often need education about the social and economic benefits of improving water supply and sanitation to make a case for prioritizing the sector in policy and planning processes. Public education campaigns, such as the "report card" and public meeting approaches employed in parts of South Asia, can help mobilize broad support and exert pressure for change on elected officials. Equally important, civic organizations and the public need information regarding the ways in which existing subsidies are captured by middle- and upper-income households and prevent expansion of service to the poorest.

Broad policy and institutional reform is also essential for reducing political interference in the day-to-day operations of water and sanitation agencies in many countries. So long as water supply and sanitation service providers are reliant upon the state for budgetary transfers, and so long as agency staff are vulnerable to interference by officials in decisions related their careers, priority setting, pricing, and investment will continue to favor those with political connections—which almost never includes the poor. "Ring fencing"³ of agencies to help make financial and personnel management processes more transparent and less vulnerable to corruption, as well as the enactment of civil service legislation to improve incentives for

good performance, are two examples of the kinds of reforms that can help reorient planning and decisionmaking toward communities with relatively weak political voice.

It is also worth noting that, in the water and sanitation sector, change is often triggered by a crisis, such as a drought, a precipitous drop in service levels, an outbreak of disease, or a financial failure. Political shifts, such as decentralization or elections, can also be an opportunity for reform, as can external shocks, threats, and opportunities, such as the possibility of privatization or donor pressure. Indeed, timing is one of the basic challenges of the sector—how to make progress within one political cycle after decades of neglect or how to interest politicians in measures that are not likely to yield visible results during their terms of office.

It is thus important to look for historic opportunities to make large strides and also to pursue buy-in around a few simple first steps that can yield short-term benefits to the politicians and policymakers. Such “confidence building” measures that build capacity, trust, and social capital can help pave the way for deeper, subsequent reforms (Kingdom and Van Ginneken 2004).

Institutional constraints

Two types of institutional constraints⁴ stand in the way of expanding access to water supply and sanitation services: the lack of appropriate institutions at all levels, and chronic dysfunction of existing institutional arrangements. At the community level, potential users of services are often constrained by the absence or underutilization of institutions to facilitate collective or individual action. At the national and subnational level, sanitation often has no institutional home at all, creating a policy vacuum and a corresponding lack of prioritization in budgetary decisionmaking.

Among existing institutions involved in the extension, operation, and maintenance of water supply and sanitation services—including formal organizations such as utilities and local governments, less formal associations such as village committees, and principles or practices such as laws, regulations, and customs—persistent problems at the heart of constraints to expanding access to service include inadequate capacity, inappropriate incentives, lack of accountability, and absence of a sound regulatory system. For women, legal barriers to owning and inheriting land can also serve to limit their access to water and sanitation services, as can their status as renters with absentee landlords.

Capacity deficits can be addressed in part by targeted assistance for training and institutional investments

for example, information management technology. In addition, relaxing the prerequisite condition normally prescribed for development assistance (that certain reforms are first put in place to ensure effective and accountable use of funds), can also generate opportunities for capacity building to take place along side the reform process in some of the world's poorest countries.

Once an accurate determination of reform and capacity building needs is made, and credible steps are taken to ensure that they will be carried out during project implementation, investments in infrastructure should not be further delayed. A flexible approach that allows reforms, capacity building, and financial investments to proceed in parallel should be adopted. Regional facilities, such as the Africa Water Facility can also help the poorest countries to embark on such reforms while, at the same time, making progress toward target 10. The task force strongly advocates such parallel, learning-by-doing approaches.

Perverse incentives are also often an issue. In some rural water supply projects, for example, public water points are owned by a water agency rather than by the beneficiary community. In such cases, the community may not maintain the infrastructure properly or fix it if it breaks down. The incentive structure is changed when ownership is shifted to the community.

A similar issue relates to the debate over who is responsible for providing sanitation service: is it a private (household) responsibility or a public responsibility? Clarification regarding ownership of and responsibility for public, community, and household sanitation systems can create the right incentives for adequate investment and proper care of infrastructure.

Given both the massive scale of the sanitation crisis and the fact nearly everyone in a community must be using improved sanitation for health benefits to start to accrue, focusing attention at the community level, with the community as a whole assuming the responsibility for mobilizing households within their boundaries, is likely to result in faster progress toward target 10. For example, subsidies, where required, can be delivered to the community rather than to individual households, thereby rewarding collective action, self-regulation, and the elimination of open defecation village-wide (World Bank 2004). Contests and competitive schemes can create powerful incentives for change. A good example is the Gadge Baba scheme in India's Maharashtra state, where reputation, recognition, and community awards have catalyzed the spread of sanitation and hygienic behaviors.

Financial constraints

Poverty is a principal impediment to increasing access to services, from the household to the national level. Within communities, some households simply cannot afford the costs of improved services without assistance from other families or from the state. Many poor countries simply do not have the financial resources either to provide water services to all or to sustain their operation.

Compared with wealthy households that use network services, many poor households pay a much higher proportion of their income for water and sanitation services delivered by informal vendors and service providers. The poor also regularly pay much higher rates for these informal services than the better-off do for network services, despite the fact that the informal services provide poorer quality water, significantly smaller quantities of water, and considerably inferior sanitation services. Perversely, the very fact that the poor pay more for water than do the rich is sometimes cited as proof that even the poorest can "afford" to pay for water. This line of reasoning is specious at best. For people whose poverty forces them to make a choice between spending money on water and spending money on other very basic needs, like sufficient food or adequate shelter, water is plainly not affordable.

Furthermore, often the only way the poor are able to pay so much for their water supply and sanitation is by making small, but frequent, payments. Hence, when improved service become available (for instance, through a utility) and the poor are required to pay their tariffs at less frequent intervals (for instance, monthly), experience shows that they are often unable to cope, given the numerous demands on their limited incomes and the resulting inability to save. This suggests that mechanisms that allow prepayment or pay-per-use could be a factor in improving access.

Thus, while institutional reform is often necessary for the expansion of access to water supply and sanitation, it is often not sufficient. Financial investment is also required, whether from national or subnational government tax revenues; user charges; cross-subsidies from users who can afford to pay; private-sector investment; or official development assistance.

A variety of obstacles limit access to these sources of finance in low-income countries, however. Water and sanitation utilities in the poorest countries, for example, often have weak managerial and financial capacities. They are unable, for a variety of reasons, to generate sufficient cash flows to meet recurrent expenditures, much

less to make the investments necessary to expand coverage to unserved communities. Towns and municipalities in developing countries typically have limited access to loan financing facilities. Combined with limited tax revenues and unreliable transfers from central government, these local administrations are often unable to provide much support to public service providers.

In some countries, governments have been reducing investment in water supply and sanitation with the hope that private-sector investments will fill the gap. Recent evidence suggests that this expectation is often overly optimistic; annual private-sector investment in water supply and sanitation for developing countries has continued to decline each year since its peak in 1997.⁵ The features of investment in water and sanitation facilities—including the "lumpiness" of major infrastructure costs, the long payback periods of 20 years or more, and the political difficulty of charging cost-recovering tariffs—make it difficult to attract private investment. The frequency with which water and sanitation concessions in both developing and industrial countries have been postponed or cancelled over the past several years (often due to currency shocks) is evidence of how difficult it is to design and implement successful private-sector involvement in water and sanitation services.

This decline in private-sector investment in water supply and sanitation for developing countries has taken place against the backdrop of an ongoing and heated debate about the appropriate roles for the private sector in this area—a debate that has been polarized around conflicting ideological positions and has led to major conflicts, especially around large-scale projects involving multinational companies. The cost of conflict generated a stalemate of sorts amongst stakeholders on how best to move forward with improving access to water supply and sanitation, with obvious consequences for the attainment of target 10, especially in middle-income countries. While there are signs that dialogue around private sector involvement has recently become less polarized and more productive, still greater constructive engagement around this issue is needed; such engagement could be enhanced, for example, through an independent, balanced multi-stakeholder assessment of the impacts of public and private sector participation that would glean lessons from past experiences and enhance decisionmaking on service delivery options.

Trends in official development assistance indicate that support for water supply and sanitation infrastructure is very modest, both in relation to support provided to other

infrastructure sectors and in terms of what is necessary to meet the Millennium Development Goals for water and sanitation. Nor is support directed to those countries that need it most: A recent report by the Development Co-operation Directorate of the Organisation for Economic Co-operation and Development shows that less than 60 percent of population has access to an improved water source. Moreover, aid to water and sanitation is concentrated in certain countries, with the ten largest recipients receiving 53 percent of the total. In addition, the prerequisite condition normally prescribed for official development assistance—that for effective and accountable use of such aid, certain reforms must be in place—has been a constraint to the countries most in need for help in meeting target 10. At the same time, few developing countries give priority to investments in infrastructure, including water and sanitation infrastructure, in their investment programs (OECD-DAC 2004).

In discussing financial constraints, a distinction should be made between the absolute lack of resources for expanding water and sanitation coverage and the need to redistribute potentially sufficient existing resources, so that target 10 can be met. Among the poorest low-income

countries, pervasive poverty creates binding financial constraints to the expansion of coverage (see tables 2.1 and 2.2). There, no progress can be made in achieving the Millennium targets for water and sanitation unless external aid is increased and refocused. In some countries with higher levels of income, sufficient financial resources exist to provide universal coverage, but their concentration among wealthier households leaves a substantial proportion of the population unserved. For these countries, emphasis must be placed on enacting the policy and institutional reforms necessary to redirect internal resources to benefit the poor.

Across all countries, meeting the Millennium Development Goals for water and sanitation requires adequate resources for extension, rehabilitation, and operation of water supply, sanitation, and wastewater treatment infrastructure, as well as for hygiene promotion and public education programs (box 2.1). The financing strategy to be adopted by each country to meet the costs of achieving an often dramatic expansion of water supply and sanitation coverage—including who will foot the bill and how—depends principally on a country's income level and whether the majority of the unserved is above or below the poverty line.

Box 2.1 Meeting Target 10: what will it cost?

Estimating the resources required to meet the Millennium Development target for water and sanitation requires analyses at two levels: the global level and the national level.

Global-level estimates are helpful in giving a sense of the magnitude of the financing required. Global financing cost estimates range from \$51 billion to \$102 billion for water supply and from \$24 billion to \$42 billion for sanitation for 2001–15. There is no “absolute” cost figure, as much will depend upon the technologies adopted and country-specific preferences and conditions. Taking an average would yield \$68 billion for water and \$33 billion for sanitation, for a total of \$101 billion. That amounts to \$6.7 billion per year – less than half what Europe and the United States spend annually on pet food (\$17 billion).

At the national level, however, the critical question for developing countries is, How much it will cost to meet the target in their own country? The UN Millennium Project has developed a methodology for carrying out national-level needs assessments. This methodology is discussed in detail in the main report (UN Millennium Project 2005). A needs assessment starts by identifying

needs and the necessary “interventions”—broadly defined as goods, services and infrastructure—required to meet those needs. Then coverage targets to be achieved by 2015 are defined for each set of interventions. Using detailed investment models, countries can then project the human resource, infrastructure, and financial needs for meeting the water and sanitation target. Additional information on these needs assessments is available at www.unmillenniumproject.org.

The methodology allows countries to determine the cost of the following set of interventions required to meet target 10:

- Extension, rehabilitation, and operation of the water supply and treatment infrastructure, as well as sanitation and wastewater treatment infrastructure.
- Hygiene education, community mobilization, and behavior change programs.
- The extension of infrastructure for water storage and transport coupled with Integrated Water Resources Management (IWRM) to ensure adequate supply of water for domestic, agricultural and industrial use, as well as ecosystem functioning.

Compare, for example, the situation in Indonesia with that in Mali. Indonesia is a middle-income country, home to roughly 62 million people without access to sanitation and 44 million without access to water. Approximately 14 million Indonesians live below the poverty line. Mali, a low-income country, has roughly 1 million people without access to sanitation, 4 million without access to water, and 8 million below the poverty line (UNDP 2003). Assuming that all those without access to improved services are living below the poverty, then the unserved population would be distributed as in table 2.5.

focused on attaining target 10 should be afforded grant or grant-like financing to support their efforts in expanding access to services.

- Subsidies for capital expenses (and, where necessary, for operating costs) be established to ensure equitable access to basic infrastructure services. Capital costs for water supply and sanitation programs in rural areas, some small towns, and urban slums may need to be partially or wholly subsidized. Care must be taken to ensure that the particular strategies adopted (for example,



Photo: Mats Lannerstad

	Mali	Indonesia
Living below poverty line	1 million unserved living in poverty	14 million unserved living in poverty
Living above poverty line	0 unserved living above the poverty line	48 million unserved living above the poverty line

Table 2.5 Distribution of the population without access to basic sanitation in Mali and Indonesia

For the world’s poorest countries, such as Mali, a viable financing strategy for meeting the Millennium Development Goals for water and sanitation requires substantial external finance. Improved mechanisms for mobilizing domestic resources and financing are, of course, important, but alone they cannot solve the financing problem that these countries need to overcome to meet the Millennium Development Goals. For this reason, it will be imperative that:

- All official development assistance to the poorest countries that are significantly behind schedule for meeting the Millennium Development Goals be provided in the form of grant or grant-like support.
- Low-income countries develop poverty reduction strategies, together with medium-term expenditure frameworks, that include explicit provisions for meeting the water and sanitation targets. Donor methodologies must be changed to allow countries to develop strategies that realistically address the challenges of meeting the Millennium Development Goals; those countries whose strategies are technically, socially, and environmentally sound and

capital grants or lifeline tariffs) are targeted to poor households and are not merely benefiting wealthier consumers with network connections. Subsidies should focus on expanding access to service rather than reducing the cost of consumption.

The financing strategy for water and sanitation in middle-income countries—such as Indonesia, as discussed in the example above—must rely much more on strong national action. Many, if not most, of these countries do not require external grant-based financing to meet the water and sanitation targets; they can typically access private capital markets for any incremental resources needed, provided they can show that the loans will be repaid. To do this, they may need assistance to avoid some of the financial risks inherent in the current international financial architecture, or even international technical support in designing appropriate measures to attract and manage financing effectively. At the household level, increased access to credit or small loans can often unleash latent demand for improved services as well. Where significant

regional and community disparities exist, governments in middle-income countries have a critical role to play in facilitating national financial policies that ensure equal access to services among all citizens. Where necessary, they can secure loans from regional and international banks and financing institutions. Finally, it is important to note that in many low- and middle-income countries, merely reallocating existing resources—by reducing subsidies to the better-off sectors and communities in order to prioritize service expansion to the poor—is all that is needed to achieve target 10.

Technical challenges

One of the important lessons of the past several decades of international collaboration for expanding water supply and sanitation services has been that nontechnical issues such as financing and institutions are equally important—and often more important—explanations for the persistent lack of access among developing countries than are technical challenges. At the same time, the pendulum should not swing so far as to neglect entirely the role of technical considerations in expanding services. Indeed, the provision of safe and reliable services is often more technically challenging in poor communities than in rich ones. Extending services to a dispersed rural settlement or dense urban community on marginal land, for example, is one of the tougher design problems that a water and sanitation engineer can face.

Although the amounts of water required for increasing access to safe drinking water supply and sanitation are

relatively minor in comparison with the amounts required for agricultural uses, there are often situations in which the physical availability of water resources on a sustainable basis (and access to technologies suited to that environment) limits efforts to increase sustainable access to water and sanitation. Similarly, climatic factors can certainly shape a country's ability to provide and maintain water supply and sanitation services for its citizens. Whereas inexpensive solutions are available in some cases (for example, rainwater harvesting), in others costly infrastructure is required in order to control droughts and store water for the dry periods. Such physical constraints may hinder economic development in general and thus impede progress toward all the Millennium Development Goals.

Fortunately, a wide range of technologies are currently available that can provide safe, reliable water supply and sanitation services to households around the world (box 2.2). What is critical is to select the "right" technology—that is, one that can deliver services reliably and sustainably in a particular local context. Too often a mismatch between supply and demand has led to the installation of infrastructure that was too expensive or complex for communities to maintain or that was ill-suited to community preferences or customs. Planners and decisionmakers must engage sincerely with unserved communities, working as partners to identify and implement water supply and sanitation improvements that are technically, financially, environmentally, and socially sustainable, and that respond to households' felt needs and preferences. Adopting cost-saving designs and approaches allows

Box 2.2 Household water treatment and safe storage

Helping households improve and maintain water quality at home has proven health benefits, is cost-effective, and contributes directly to meeting the Millennium Development Goals. Household water treatment and safe storage can serve as an immediate mechanism to reduce illness among the unserved. A recent study conducted among 400 households in a Malawian refugee camp indicated that point-of-use interventions resulted in 31 percent fewer cases of diarrheal disease in children under five. Moreover, other recent evidence demonstrates that household water treatment reduces diarrheal disease at levels comparable to sanitation and hygiene measures.

Promising treatment technologies include chlorination, combined chlorination and flocculation, solar disinfection, and filtration. Treatment needs to be accompanied by safe storage, which can be accomplished by using a container with a narrow opening and a dispensing device such as a tap or spigot to protect collected water. These measures are particularly important because the bacteriological quality of drinking water frequently declines after collection.

Although there are challenges, particularly with regard to achieving widespread adoption and sustainability of the interventions, household water treatment offers a rapid and affordable way of reducing the global burden of waterborne disease.

Source: WHO International Network to Promote Household Water Treatment and Safe Storage (www.who.int/household_water).

resource-constrained countries to reach more unserved households for a given investment. To this end, national and subnational governments must support the development of flexible technical standards that are appropriate for the challenging environments in which many of the poor reside—dispersed rural areas, congested urban communities, and squatter settlements on marginal lands. The condominal sewerage approach pioneered in Latin America is one example of an innovative technology that eventually supplanted existing, traditional technical standards for sewers (Watson 1999). The use of simple technologies also provides greater opportunities for households to contribute labor and in-kind assistance in lieu of cash payments, thus bringing improved services within the grasp of many more unserved families.

The special case of sanitation

Whereas the financial, institutional, and technical constraints discussed above in theory pertain to expanding both water supply and sanitation services, in practice sanitation and hygiene receive substantially less attention, funding, and priority than water supply in virtually every country around the world. The Joint Monitoring Programme has recently warned that, "[w]ithout a sharp acceleration in the rate of progress, the world will miss the sanitation target by half a billion people" (WHO/UNICEF JMP 2004). The world community is dangerously off track from its goal of bringing improved sanitation to 1.4 billion people over the next ten years.

That 2.6 billion people around the world are forced to defecate in plastic bags, buckets, open pits, agricultural fields, and public areas in their communities should generate a collective outcry for immediate, concerted efforts to expand access to improved sanitation facilities. Yet, coverage rates in the developing world are barely keeping pace with population growth. Why does sanitation command so little attention from local and national governments and from the international community?

One reason is simply that the poor often have more pressing priorities, such as food, water, and basic shelter. But sanitation's "disappearance" from planning and policy dialogues can be traced in part to the absence of a national-level institution with responsibility for promoting sanitation in the majority of countries in the developing world. At the same time, education and awareness efforts from the local to the national level can be hampered by strong cultural and personal taboos against discussing human wastes and their disposal, unless these taboos are properly understood and put to use. Moreover, the limited political and personal power of women in many developing countries means that some of sanitation's strongest advocates are virtually absent from decisionmaking and priority-setting processes; in addition, the unique sanitation needs of women and adolescent girls (during menstruation and pregnancy, for example) receive little recognition when discussions about sanitation and hygiene occur (box 2.3).



Photo: WHO/P. Vinat

Box 2.3 Unheard voices of women

"I gave birth to my children while I was living in the same jhuggi (slum). After giving birth to the child I do not eat food for two days and so there is no need to go to a latrine. But after two days I go to the same place in open to defecate. When I go out to defecate my elder children do baby sitting for the younger ones but there are times when the babies are left alone in the jhuggi with no one to take care of them."

—Miradevi, age 35, Sanjay Amar Colony, an urban slum in Delhi, India.

"I go out in open to defecate. Due to the continuous stare of men, I have to get up again and again in between the process of defecation."

—Babita, age 27, Sanjay Amar Colony.

Source: UN-HABITAT 2004.

Compounding the institutional void related to sanitation is an ongoing debate regarding the proper allocation of responsibilities for improving and managing sanitation. Many of the public health benefits stemming from improved sanitation are shared by the community at large, rather than accruing principally to individual households (which, it could be argued, is also the case for improved water supply). Therefore, community institutions, such as local, regional, and national governments, should have an interest in improving sanitation—and an obligation to devote resources toward achieving that goal. Households do, of course, benefit from the increased convenience, safety, privacy, and dignity of improved sanitation facilities in their homes or neighborhoods. Some governments and development organizations have thus argued that sanitation should be considered a household responsibility.

The reality is that improved sanitation generates both public and private benefits, and community sanitation systems typically comprise both household- and community-level components. Governments should be prepared to invest in sanitation services for their populations, both as a means of attaining public health and environmental goals and as a strategy for supporting development among those living in poverty. Another reality is that undue emphasis is being afforded to debates about financing. More attention should be paid to engaging unserved and underserved communities in a dialogue that allows them to better appreciate the benefits of improved sanitation

and hygiene and to participate actively in the design of a strategy that yields appropriate, affordable, sustainable service improvements (box 2.4).

Indeed, expanding sanitation in a meaningful way requires mobilization and motivation of community members toward individual and collective action. As water utilities typically do not have a comparative advantage in motivating collective or individual action, they should—with the support of government as necessary—forge partnerships with capable civic and private organizations to advance the sanitation agenda within communities.

Unfortunately, education campaigns focused exclusively on the private health benefits of improved sanitation and hygiene have had limited impact. Instead, innovative marketing strategies are needed that build on community trust and solidarity; that tap into desires for privacy and convenience; and that capitalize on basic human emotions of pride, dignity, shame, and jealousy, as well as the social dynamics of peer pressure, rivalry, and competition. As marketing is generally most effective among younger populations, sanitation initiatives must include hygiene education in schools, along with the provision and maintenance of improved sanitation facilities at school premises.

Effective, community-based programs are the most promising way to raise awareness of and demand for improved sanitation in communities; such initiatives are the key to meaningful progress toward the Millennium Development target for sanitation. Critical to the success of

Box 2.4 Where does hygiene fit in?

Hardware alone cannot improve health very much: What matters is the way in which it is used and the extent to which it is accompanied by efforts to promote changes in hygiene-related behavior. In some cases, this change is fairly automatic; people across the world need little encouragement to increase the amount of water they use for washing once it is readily available at the household level. In other cases, however, a significant amount of time and effort is required to alter hazardous practices that are wrongly considered “safe” or are simply not thought about.

Even after substantial investments have been made in water supply and sanitation hardware, hygiene behavior in these areas often remains a substantial risk to health. In many cultures, for example, the excreta of young children are considered safe and are thus not treated with

the same hygienic concern as the excreta of adults. In fact, children are a significant reservoir of infection. This means that the feces of children can be just as infectious as those of adults. The practice of washing hands with soap after defecation is another example of a behavior that does not follow “automatically” from the provision of hardware, and yet has major health implications.

According to the World Health Organization, improved water supply reduces diarrhea morbidity by 21 percent; but the simple act of washing hands at critical times can reduce the number of diarrheal cases by up to 35 percent, and additional improvements of drinking-water quality, such as point-of-use disinfection and safe storage, would lead to a reduction of diarrhea episodes of 45 percent. According to the Water Supply and Sanitation Collaborative Council, safe disposal of children’s feces leads to a reduction of diarrheal disease of nearly 40 percent.

community-based approaches is the "rights and responsibilities" principle, which provides that all people in a village community have both the right to a clean and healthful living environment and a shared responsibility to avoid disposing of their wastes in ways that adversely affect the cleanliness and healthfulness of their living environment. This principle of rights and responsibilities is central to efforts that focus on total sanitation coverage or "no open

defecation" within project communities. Examples of total sanitation coverage include the Orangi Pilot Project in Pakistan, the condominal and simplified sewerage system in Brazil, and community-led total sanitation programs.

Community-led total sanitation programs have been implemented in a number of countries, among them Bangladesh, India, Cambodia, Indonesia, Mongolia, Nepal, Uganda, and Zambia. This approach has been followed for more than 20 years in rural sanitation programs in Tanzania (in the Wang'ombe Rural Sanitation Project financed by UNICEF) and in Zimbabwe. As practiced in Bangladesh, it starts with strict proscriptions against capital subsidies⁶, as even a rumor that subsidies for construction of sanitary facilities are forthcoming keeps people from joining the community effort. "Hands-off" facilitators, who do not attempt to teach, advise, criticize, or tell people what they should do, act as resource persons for community members as they do their own appraisal of open defecation. Community members together map their households and the places where they defecate. They then stand, smell, and discuss the situation in their defecation areas; calculate the amounts of feces produced; analyze routes of contamination (through dirt, flies, animals, and so forth); and estimate how much excreta each person in the community ingests each day. The resulting combination of disgust, shame, religious precepts for cleanliness, and self-respect typically triggers a collective decision to end open defecation in the community.

Alternatives to open defecation are pursued by households according to their own preferences and available resources. Simple pits and various types of latrines are typically installed. Emphasis is placed on local designs and affordable materials. Communities that have undergone the process often erect signs at the entrances to their villages proclaiming that they are totally sanitized. The resulting social solidarity can provide a base for further collective action.

Although various explanations have been offered over the years for the absence of sanitation and hygiene from much of the discussion about water, health, and development, what is clear is that excreta and its disposal have been and continue to be unpopular subjects from the local to the international level. Without strong champions to raise public awareness and generate concern, the sanitation crisis has not been met with anything like the kind of response necessary to make substantial and sustainable gains. It is instructive to consider how another "difficult"



Photo: Frida Lamschammar



topic—HIV/AIDS—was freed from its own cultural taboos and transformed into a leading global health concern.

It is true, of course, that HIV/AIDS has affected both wealthy and low-income families in both rich and poor countries around the world, providing a foundation for solidarity that is broader than that in the case of sanitation. At the same time, the way in which that solidarity was cultivated—through simple, consistent messages and a single, coherent call for action—has much to do with the successful marshaling of support and resources to combat HIV/AIDS. For sanitation, the impact of a similar coordinated campaign to raise awareness has already been felt, as evidenced by the addition of the sanitation target to the original Millennium Development Goals in Johannesburg.

One of the more striking implications of this chapter's discussion of constraints to expanding access to water supply and sanitation services is that many of these bottlenecks lie outside the sector itself. The inadequate financial allocations to water and sanitation services in most developing countries are the result of budget-setting processes in which water and sanitation is pitted against competing claims for limited resources. Lack of re-

sponsiveness and accountability in water and sanitation service provision often stems from broader civil-service legislation and the balance of power between central and local government, both of which are established at the national level. Governments that are committed to improving long-term access to water and sanitation services must, by extension, be prepared to make hard choices regarding budget priorities, the devolution of powers and the provision of support to local administrations, and the restructuring of incentives and accountability networks among the public, private, and civic sectors. Furthermore, the chief role of governments must no longer be to deliver solutions, especially in the case of sanitation, but rather to facilitate community-based action.



Photo: Mats Larmerstad

Notes

1 For instance, according to the 2004 WHO/UNICEF JMP report, several low-income countries increased their coverage by over 100 percent between 1990 and 2002, among them Benin, Madagascar, Cameroon, and Nepal.

2 Numbers of extreme poor calculated by multiplying the national poverty headcount ratio by the population. National poverty headcount ratios are taken from the World Development Indicator database (World Bank 2004). Countries for which no poverty or water and sanitation data are available are not included in the calculations, which is why the totals are less than the total number of unserved people, for both water and sanitation. We are grateful to Michael Krouse and Alice Wiemers of the Millennium Project Secretariat, who carried out this analysis.

3 Ring-fencing refers to the compulsory reservation of funds for use within a specific limited sector or department, such as a specific agency, utility, or division of a company. It implies, for instance, that income a utility gains from providing water supply would then remain with that utility to cover operation and maintenance costs, to pay salaries, or to fund expansion of services.

4 The term "institutional constraints" refers to obstacles developing countries face in a wide range of areas required for effective development policy-making and implementation, such as human resources, managerial skills, monitoring and evaluation systems, work processes, organizational cultures and norms, and legal frameworks.

5 In nominal terms, official development assistance for water and sanitation have declined since 1995, fluctuating between \$18 billion in 1996 and a low of \$13.5 billion in 1999. These commitments were about \$16 billion in 2002.

6 Whereas the community-led total sanitation approach explicitly prohibits subsidies for the construction of sanitary facilities, there may be cases in which cross-subsidies among households, and/or direct subsidies to poor households, are justified. Given the wide range of socioeconomic characteristics, technical challenges, and costs of providing improved service found across unserved communities, blanket principles regarding subsidies are inappropriate.



Photo: SWI

3

Optimizing water resources for the Millennium Development Goals

Sound water resources development and management underpins attainment of all the Millennium Development Goals, not only the one dealing specifically with water supply and sanitation. In this chapter, we discuss the links between water resources and poverty, hunger, health, gender, and environmental sustainability and the actions that countries will need to take to optimize the contribution of water resources to the achievement of the Goals.

We use the term “water resources development and management” to mean the actions required to manage and control freshwater to meet human and environmental needs. Such actions include investments in infrastructure for storage, abstraction, conveyance, and control, as well as for hydropower, flood control, irrigation and drainage, water harvesting, and so on; investments and actions undertaken to protect groundwater resources, control salinity, and promote water conservation; and an array of governance and management measures, including the development and strengthening of institutional and regulatory systems and policy reforms to promote wise stewardship of freshwater resources.

Investments in water resources development and management can contribute to meeting the Millennium Development Goals as a whole both through broad interventions designed to promote sustainable development in an area—such as multipurpose river basin development and aquifer management—and through targeted actions addressing one or more particular goals in a specific location, such as watershed management within degraded areas farmed by poor families. Both types of interventions are important for making many of the Millennium Development Goals a reality. Here are some examples:

- **Poverty and Hunger Goals.** Adequate water infrastructure and good management are critical for agriculture, which will continue to be a key sector for low-income countries and for the livelihoods of

the poor who live there. Sound water management is also needed to avoid the degradation of common resources, including lakes, rivers, and coastal areas, on which many poor people depend for food and income. Water is also an important input for production in industry and many other activities that support economic development and reduce poverty.

- **Health Goals.** The management of water resources affects the incidence of vector-borne diseases, as well as illness caused by water contamination. Vector-borne illnesses, including malaria, dengue, and schistosomiasis, are passed to humans by insects and snails that breed in aquatic ecosystems. Improved water management practices are an increasingly important strategy for combating this category of disease; improving irrigation techniques to avoid standing or slow water, for example, helps prevent the spread of mosquitoes that carry malaria. Water contamination is another threat to both human and environmental health.
- **Gender Goals.** The development and management of water resources has significant gender dimensions in the developing world. Since rural women produce 60 percent to 80 percent of the food in developing countries, explicitly involving women farmers in irrigation schemes and giving them a voice in decisionmaking related to water management are essential to fighting rural poverty. The meaningful involvement of women alongside men in integrated water resources initiatives can increase project effectiveness, especially since water-related environmental risks affect women more than men. Moreover, by reducing the frequency and intensity of water-related disasters, sound water resources management can benefit all women, not just those engaged in agriculture. In Bangladesh, for example, the 1991 cyclone and floods took a greater toll on women than men.
- **Environment Goals.** Water is perhaps the most fundamental of all environmental resources and the key to the sustainability of the world's ecosystems. Ecosystem health, in turn, is critical to the quantity and quality of freshwater supply. Without sound water resources development and management, human activities can upset the delicate balance between water resources and environmental sustainability. "Stopping the unsustainable exploitation of water resources by developing water management

strategies at the regional, national, and local levels, which promote both equitable access and adequate supplies" (a goal clearly enunciated in the Millennium Declaration, but not mentioned in any of the Millennium Development targets), and developing "integrated water resources management and water efficiency plans by 2005, with support to developing countries" (as called for by the Johannesburg Plan of Implementation) will clearly be important preconditions for reaching the Millennium Development Goals as a whole.

What actions are needed?

Whereas investments in water resources development and management contribute in a variety of ways to meeting the Millennium Development Goals as a whole, the specific water-related interventions required to meet the Goals will vary across regions, countries, and even subnational areas. Context strongly influences the nature of the water resources actions that must be taken to meet the Goals.

The key determinant across virtually all regions and scales of analysis is the relationship between the availability of freshwater and the requirement for its use. Both availability and requirement are multidimensional notions, each having quantitative, qualitative, temporal, and spatial dimensions. Simply put, the actions needed to meet the Millennium Development Goals in a given case depend on the extent to which the availability of water resources—in its many dimensions—is adequate to meet the requirement for water resources to meet the health, poverty, gender, and environmental sustainability objectives of the Millennium Development Goals.

The availability of freshwater resources can be disaggregated into three principal dimensions: quantity, quality, and variability.

- **The quantity** of water available, from both surface and groundwater sources, is one fundamental aspect of availability. This amount is, of course, strongly related to rainfall and to the infrastructure already in place for water storage and abstraction. Availability comprises both physical access to sources wholly within a particular boundary (including fossil groundwater) and negotiated access to shared water sources, such as rivers, lakes, and aquifers.
- **Quality** is an aspect of freshwater availability that has become a major issue in some parts of the world, and that can also have a major impact on

attainment of the health and environmental sustainability Goals. In some cases, such as Bangladesh's problem with arsenic-contaminated groundwater, water quality problems are naturally occurring. Much more common, however, is the degradation of water quality by anthropogenic causes, such as pollution discharges into surface water bodies and leaching of contaminants into underground water sources.

- **Variability** in the availability of water, both in time and space, depends both on climatic variables and on the types of infrastructure and management arrangements already in place for water control. Surface waters often have highly seasonal regimes; this is particularly the case in the tropics, where most of the countries that are off-track in meeting the Goals lie. In addition to seasonal variability, there is often considerable variability from one year to another. Both seasonal and year-to-year variability create a need for diversification of water sources, early warning systems, contingency plans for droughts and floods, and storage alternatives (both surface and subsurface).

The requirement for freshwater resources not only has quantity, quality, and (spatial and temporal) variability characteristics, but also goal-specific dimensions—which mean that the nature of the water resources actions needed to meet the Millennium Development Goals will vary from Goal to Goal. For example, to meet the poverty Goal, countries will need to use water for productive purposes to ensure livelihoods in water-dependent sectors, such as agriculture, industry, energy, transport, and fisheries; they will also need to control water variability, since households living at the brink of survival can easily be devastated by a single water-related extreme event, such as a flood or drought. Meeting the hunger Goal will require the use of water as an input to agriculture and to support productive activities that help ensure economic access to food (for example, through employment of landless labor in the dry season), as well as access to safe water and adequate sanitation to maintain the health conditions required for proper absorption of nutrients. Meeting the health Goals will require access to domestic water availability and sanitation, sound water management to limit vector-borne diseases, and appropriate levels of water quality. Meeting the gender Goal will require ensuring that women have a strong voice in decisionmaking processes related to water management. Meeting the environment Goals will require

that sufficient amounts of water are reserved to ensure healthy ecosystem functioning.

It is important to note, however, that the Millennium Development Goals will not be addressed in isolation. Typically, other uses—agricultural, municipal, and industrial—dominate water management activities and need to be addressed to ensure that the Millennium Development Goals receive priority.

All this will greatly affect the level and the nature of requirements for water, the stress on water resources, and the mechanisms for identifying and ensuring its best use—the actions needed to meet the Millennium Development Goals. Unfortunately, in many of the world's poorest countries, the quantity, quality, and variability of water resources is such that tradeoffs will need to be made between the use of water resources to meet the various Goals, particularly between the hunger and environmental sustainability Goals. According to a recent study conducted under the Comprehensive Assessment of Water Management in Agriculture, sponsored by the Consultative Group on International Agricultural Research (CGIAR), more than 1.4 billion people already live in river basins where high water-use levels threaten freshwater ecosystems (Smakhtin and others 2004). Other studies have shown that in order to sustain ecosystems, irrigation withdrawals—vital to meet the hunger Goals—will need to be reduced by 7 percent by 2025, in comparison with 1995 levels (Alcamo and others 2000). Clearly, innovative approaches will be required to reduce these inherent tradeoffs among the uses of water resources to meet the various Goals.

A quick picture of this situation is provided in map 3.1, which depicts water stress in major basins taking into account environmental water requirements (Smakhtin and others 2004). The map uses a water stress indicator that relates total withdrawals to the mean annual flow less an estimated amount for environmental flow. Much of the area under greatest stress, where people are already overexploiting rivers by tapping water that should be reserved for environmental flows, coincides with areas that are heavily developed for irrigation to provide water for food. Much of Sub-Saharan Africa and Latin America have low degrees of environmental water stress, raising the issue of whether these areas could be tapped for additional water to support livelihoods, if that could be done sustainably. Note that areas with high levels of water stress do not coincide with areas with low levels of access to safe drinking water or basic sanitation.



Map 3.1 Water stress in major river basins, Source: Smahktin and others 2004.

Note: High water stress indicates that the amount of water withdrawn for human use is a large share of the amount available after environmental requirements are met. In most basins with a water stress indicator of 0.7 or higher, aquatic ecosystems are already suffering some degree of degradation, and there is little or no scope to increase water withdrawals without causing irreversible damage

The preceding analyses suggest two important conclusions:

First, the specific actions that a particular country or region should take to improve water resources management depend on the relationship between the availability and requirement for water resources, as well as the socioeconomic, political, and historical circumstances of that area. Clearly, natural endowments give countries and regions different starting points for water resources development and management. But countries that start “from behind”—with high variability and low per capita freshwater availability—can overcome these constraints through appropriate investments and management arrangements.

Second, given the complex relationship between water resources and poverty, hunger, gender equity, and environmental sustainability, coordinated water management will have to be a fundamental component of any national strategy to attain the Millennium Development Goals. In particular, planning and policy development based on the Goals must be supported by an integrated approach to land, water, and ecosystems, one which conforms broadly to the recommendations from the Johannesburg Summit regarding integrated water resources management and water efficiency strategies. Meeting the Millennium Development Goals will therefore require investing in water resources development and management and adopting an integrated water resources management approach, outlined as follows.

Investing in water resources development and management

As the challenges for sound water resources management vary within and among countries, so must the strategies for identifying and addressing water-related obstacles to achieving the Millennium Development Goals. In general, however, countries with high variability or low availability in relation to freshwater requirements will need to embark on a plan of action involving both supply and demand management. A coherent approach to investing in water resources infrastructure and management to meet the Millennium Development Goals in a particular country might include:

- **Identifying intermediate water resource targets that support each of the key Millennium Development targets.** In the case of the hunger target, for example, a short-term water-related target might be an estimate of the land area that would need to be brought under irrigation or the degree of investment required to improve the efficiency of existing systems. For both the poverty and the hunger targets, an intermediate water target might be a calculation of the storage capacity and early warning systems that would be needed to effectively control floods and droughts.

Intermediate targets for water resources should address both investment and management issues, taking into account the vast deficiencies in infrastructure endowments in the countries farthest from reaching the Goals, as well as the potential for demand man-

agement. Intermediate targets will need to include both a physical dimension—for example, the need for irrigation infrastructure in working order—as well as a concept of use—for example, whether communities and local governments are able to maintain a safe, reliable supply of water from a tube well.

- **Carrying out needs assessments for water resources development and management based on intermediate targets.** Governments should determine the infrastructure development, watershed management practices, demand management systems, and institutional and policy measures needed for meeting the Millennium Development Goals, as well as the human and financial resource requirements to achieve them. They should cost out these needs, including both capital and operation and maintenance costs. The water infrastructure considered should include all hydraulic infrastructure needed to align water supply with demand, from water storage and irrigation infrastructure to inter-basin water transfers and infrastructure for industrial and other economic uses. Such costs should also include investments needed to ensure that infrastructure development does not negatively impact any of the Millennium Development Goals, especially the environmental sustainability targets. Equally important, estimates of the resources necessary to ensure proper, sustainable functioning of installed infrastructure—for example, through training and institutional capacity building programs—should be included in such assessments.
- **Developing a plan that outlines how to meet the needs identified in the assessment and how such actions will be integrated into a national poverty reduction strategy based on the Millennium Development Goals.** This would entail mapping out, with specific milestones at national and subnational levels, the year-to-year actions and investments required to meet the needs identified in the assessment. Such plans should not be stand-alone sectoral documents, but elements that will be integrated into overall strategies to reduce poverty and promote sustainable development in line with the Goals.
- **Defining and promoting strategies that will contribute to multiple Goals, and avoiding strategies that create conflicts among them.** A coherent national planning process should guide sectoral planning. The absence of coherence may

increase the total cost of achieving the Millennium Development Goals, reduce effectiveness, and make it hard for communities and subnational governments to plan and manage multiple programs. Integrated and synergistic strategies that generate buy-in from all stakeholders and reduce costs and conflict should be given priority. This is not to advocate rigid central planning; what is recommended is a coordination of sectoral activities in such a way that promotes synergies among them, rather than attempts to plan entire national economies.

Adopting integrated water resources management

Because the Millennium Development Goals are interlinked, water resources development and management in support of the Goals should be pursued in an integrated manner, with priority given to actions that further multiple goals. Integrated water resources management (IWRM), as defined by the Global Water Partnership, is a process that “promotes the coordinated development and management of water, land, and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems” (Global Water Partnership website). Integrated water resources management builds on three basic pillars: an enabling environment of proper water resources policies and legislation; an institutional framework of capable institutions at national, local, and river basin levels; and a set of management instruments for these institutions. Of course, the form that IWRM will take must vary from country to country; in some cases, groups of neighboring countries may profitably engage in joint IWRM exercises.

IWRM focuses on development (investment), as well as management issues. This approach is particularly important for the poorest countries most at risk for failing to achieve the Millennium Development Goals, where deficiencies in infrastructure endowments are vast. The target set by the World Summit on Sustainable Development in Johannesburg for countries to develop IWRM and water efficiency strategies by 2005 provides an opportunity to infuse planning processes based on the Millennium Development Goals with consideration of water resources (GWP 2004). If properly designed, these national IWRM strategies and processes can establish an enabling framework that encourages water management and services that benefit the poor, and thus advance the Goals.

At the same time, the 2005 IWRM target included in the Johannesburg Plan of Implementation should be



Photo: Mats Lommerstad

interpreted as meaning the initiation of a robust water resource management process. For example, one meaningful measure of progress toward a national IWRM process would be that representatives of all stakeholder groups have had the opportunity to discuss the necessary compromises between competing interests in water. Such processes take time, and the IWRM activities initiated in anticipation of the 2005 milestone should be considered essential first steps in a much longer journey toward sustainable water resources management.

Experience in several countries suggests that IWRM is an effective way of coordinating development strategies across sectors and geographical regions. Uganda and Burkina Faso have gone through multiyear IWRM processes resulting in new national policies, strategies, and laws for their water resources development and management. China, India, Thailand, and Nicaragua refer to their policy reform processes as IWRM-based.

Global institutional mechanisms for supporting water and sanitation

Direct action to manage and develop water resources to meet the Millennium Development Goals should take place as close as possible to where the problems and opportunities lie—principally at national and subnational levels. Nevertheless, UN organizations with their international partners (including international water and sanitation networks and partnerships) need to play a strong supporting role. In particular, they need to assist countries

to meet the water supply and sanitation target and to manage water resources through technical support and capacity building, objective analysis and knowledge sharing, global monitoring, and advocacy functions. These functions need to be effectively aligned toward the achievement of the Millennium Development Goals, and they need to be accompanied by international leadership and strategic guidance through a clear mechanism that builds on each organization's strengths and comparative advantages and reduces duplication.

The way in which UN organizations and their partners (including international water and sanitation networks and partnerships) presently support national water and sanitation efforts could be substantially improved. The current system has two characteristics that both contribute to its weaknesses and set it apart from the way in which the international community addresses other Millennium Development Goal issues, such as hunger or health.

First, some 24 UN system organizations and a number of international water and sanitation networks and partnerships are involved in water resources and sanitation. There is no single "lead agency" (as, say, FAO is for agriculture and WHO is for health). With so many actors involved in water and sanitation, ensuring coordinated and effective action that is aligned with the Millennium Development Goals is a challenge; indeed, organizations sometimes compete with one another, and "turf battles" occur. The United Nations System Chief Executive Board for Coordination endorsed UN-Water in November 2003

as the new official United Nations systemwide interagency mechanism for follow-up of the water-related decisions reached at the World Summit on Sustainable Development 2002 and the Millennium Development Goals. The new terms of reference of UN-Water respond to the need to increase coherence and coordination at inter-agency and country levels and also to the needs described earlier concerning coherent and coordinated leadership (UN-Water website). Nevertheless, the task force is concerned that UN-Water does not have adequate budget or staff to execute these functions at the scale required, especially in light of the policy prominence of water and sanitation in the forthcoming decade.

Second, in the past 15 years, most UN system organizations have experienced pressure to respond to emerging issues. Declining contributions to many organizations coupled with these increased demands have tended to reduce core funds and increase reliance on financing tied to pre-defined areas of work. The overall effects of these trends vary among organizations, but have included a reduced emphasis on water and sanitation; wide gaps between mandated responsibilities and delivery capacity; and a resulting inability to provide intellectual and practi-

cal leadership. In parallel, several international networks and partnerships have emerged and are active in technical analysis, knowledge sharing, and advocacy. These entities include the Water Supply and Sanitation Collaborative Council, the Global Water Partnership, and the World Water Council¹, as well as nongovernmental organizations such as WaterAid. This diversity of actors contributes much to the strength of international water and sanitation support and advocacy, but also creates new challenges to coordination to ensure effective coherent action.

To reach the Millennium Development Goals, the problems identified above need to be addressed forthrightly and urgently.

- United Nations system organizations and their member states must ensure that the UN actors engaged in technical support and capacity building, objective analysis and knowledge sharing, global monitoring, and advocacy have, both individually and collectively, the organizational capacity, mandate, staffing, and resources needed to carry out these functions.
- At the country level, UN Country Teams must strengthen their efforts to provide technical and



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capacity-building support to governments, including in the preparation of national strategies for water supply and sanitation based on the Millennium Development Goals, as well as strategies for integrated water resources management and water efficiency. Likewise, development banks and bilateral donor agencies must effectively coordinate their actions at the country level, including harmonization of procedures and joint programs.

- The WHO/UNICEF Joint Monitoring Programme must be strengthened as the key global mechanism for monitoring access to water supply and sanitation and provided with greater funding. WHO and UNICEF should ensure that arrangements increasingly enable contribution to and participation in the JMP. Bilateral agencies should both provide more funding and refrain from setting up parallel structures. UN-Water should be mandated to periodically report, through World Water Development Report, on progress in water resources development and management for the Millennium Development Goals, including progress on the development of strategies for integrated water resources management and efficiency by 2005. UN-Water and World Water Development Report must be strengthened and provided with greater funding to fulfill these roles successfully.

At the global level, provision of leadership and strategic guidance to the international community is essential. UN organizations and key operational actors and others involved in water and sanitation must be involved in this effort through a clear mechanism that should build on each organization's strengths and comparative advantages and reduce duplication. The recently defined mandate and widened participation of UN-Water correspond closely to this need, but this mechanism presently has neither the necessary funds nor staff. Several options exist:

- A multiagency entity (such as the Global Fund for HIV/AIDS, Tuberculosis, and Malaria or UNAIDS) could be created to act as the main advocate for global action on water and sanitation and to lead, strengthen, and support national scaling-up efforts; such a mechanism would need to include the key operational actors in water and sanitation; build on the various organizations' strengths and comparative advantages; and have a clear joint strategy, designation of roles and responsibilities, program

of action, and accountability for results. UN-Water, which has recently been reconstituted to include broader representation from non-UN bodies, could be transformed into a body with this responsibility; at present the entity has neither the funding nor staff to take on this role, but with a concerted capacity-building effort over the next year, it might be possible for it to assume that responsibility within a reasonable timeframe.

- A second option would be to establish a truly operational group and program on water and sanitation with the key operational bodies in and outside the UN system. The program would need to be well funded and staffed, with a clear mandate to act on achieving the targets and possibly a sunset clause in 2025.
- A third option would be to assign UN system task managers for the various aspects of water resources and water supply and sanitation. WHO and UNICEF, for example, could take the lead in sanitation, UNESCO or UNEP in the management of freshwater resources.

In addition, the recently established Secretary-General's Advisory Board on Water and Sanitation must focus on providing high-level policy commentary on progress toward the water and sanitation target, advising on strategic direction, identifying critical obstacles to progress, and making recommendations for overcoming them. It should independently and boldly comment on developing country, donor country, and UN system practices, and produce a periodic, brief, focused, high-profile report that would eschew advocacy in favor of pointed recommendations aimed at improving progress within the sector and at advancing the sector's position in the development arena.

Finally, the global networks engaged in water and sanitation and the funding agencies supporting them must collectively strengthen and rationalize their efforts to provide technical support, capacity-building, objective analysis, knowledge-sharing, and advocacy functions, and align those functions towards the achievement of the Millennium Development Goals, while at the same time taking steps to ensure they are accountable to the communities of the developing world.

Note

- 1 See www.wsscc.org, www.gwpforum.org, www.worldwatercouncil.org.

Expanding water and sanitation coverage is not rocket-science. It requires neither colossal sums of money nor breakthrough scientific discoveries and dramatic technological advances. Although reaching the water and sanitation target will by no means be easy, particularly in the very poorest parts of the world, and worldwide the sanitation challenge is indeed daunting, achieving target 10 is possible.

The critical question is, How? This chapter focuses on the answer. Based on the analyses presented in the previous chapters, what do we, as a task force, think it will take to meet the water and sanitation target and to optimize water resources management for the entire set of Millennium Development Goals? More specifically, what are the key actions that we have identified as essential to meeting the Millennium Development Goals?

A call to action

We would like to set the stage by first identifying five critical guiding principles without which the Millennium Development Goals simply cannot be achieved.

The task force is unanimous in its belief that the water and sanitation target (target 10) will not be reached unless:

- There is a **deliberate commitment** by donors to increase and refocus their development assistance and to target sufficient aid to the poorest low-income countries.
- There is a **deliberate commitment** by governments of middle-income countries that do not depend on aid to reallocate their resources so that they target funding to their unserved poor.
- There are **deliberate activities** to create support and ownership for water supply and sanitation initiatives among both women and men in poor communities.
- There is a **deliberate recognition** that basic sanitation in particular requires an approach that centers on community mobilization and actions that support and encourage that mobilization.

Photo: David Dahmén



Ms. Anna Kojumola Tibaijuka, Executive Director, UN-HABITAT. Photo: SIWI

Furthermore, our group is convinced that the Millennium Development Goals as a whole will not be met unless:

- There is **deliberate planning and investment** in sound water resources management and infrastructure.

Without these five preconditions, the poorest countries will miss target 10; the poorest people in on-target middle-income countries will be left behind; many of the gains that are made will not be sustained; the sanitation crisis will continue unabated; and, in many countries, water scarcity, variability, and contamination will hamstring progress toward all the goals.

Our starting points are thus clear: poor people and poor countries must get priority, and resources and policies must be focused on spurring and supporting community-led action. The key to reaching the targets will be to mobilize and support people themselves, country by country, particularly in slums, rural areas, and other marginalized communities where access to services is lowest.

Consistent with this focus on ground-level action, we believe that local, subnational, and national governments have the primary responsibility for expanding access to water supply and sanitation services. National governments must stand by their commitments to the Millennium Development Goals by making them priority national development goals, preparing strategies and action plans for their achievement, opening doors for community action, and mobilizing public awareness and support,

especially for sanitation and hygiene. Though governments need not engage directly in service delivery, they do need to set standards for service providers (including public utilities and the private sector), and they must intervene, if necessary, to make things happen.

Reaching the Millennium Development Goals in water supply and sanitation will require profound changes in the way the sector operates. To make the Millennium Development Goals a reality for everyone, countries must focus their efforts and resources where needs and challenges are greatest, particularly among concentrations of very poor people in urban slum areas, periurban areas, and rural areas. They must ensure that the financial burden of serving the poor is not borne by the poor alone. For upper low- and middle-income countries, this commitment principally means that existing resources must be used more effectively. To make subsidies for the poorest possible, governments must end subsidies for the nonpoor. This reallocation of resources will require significant political will and commitment, since ensuring basic services for all rather than subsidizing "luxury" service for some will challenge powerful interests and create a new set of winners and losers.

That said, there is clearly a critical supporting role for international agencies, international nongovernmental organizations (NGOs), and, most importantly, donor countries, which have also committed to the Millennium Development Goals. Most of the countries with the lowest levels of human development and that have made the least progress over the past ten years are stuck in poverty traps, bypassed by economic development because of structural impediments like geography, climate, the burden of disease, rapid population growth, heavy debt burdens, dependence upon primary commodity exports, and the inequities of the global current trade regime. For these countries, all the governance reforms, enabling policy environments, and social mobilization efforts in the world will not address the fact that domestic resources are simply inadequate to support a meaningful expansion of services. Without more official development assistance, these countries simply cannot meet the water and sanitation target; they do not have and cannot generate sufficient resources from any other source. To meet the Goals, donor countries must fulfill their side of the Monterrey compact to provide more aid, as well as increase the efficiency of aid through better coordination.

At present, there is often an inherent tension in the process: Should countries outline in a serious way what it would truly take to meet the Millennium Development

Goals or should they outline what they believe they can achieve within likely levels of development assistance? For the poorest countries most off-track for meeting the Millennium Development Goals, it is crucial to make transparently clear the gap between what they could achieve with likely levels of development assistance and what they really need in order to achieve their goals – and for the international community to step in with the necessary funding. In the water sector, donors and developing countries alike have become accustomed to identifying what can be done within the confines of existing aid allocations and national budgetary limits. To meet the Goals, this process must be turned on its head, with identification of needs and demands coming first and appropriate allocations being made second.

To ensure inclusion of and priority for the poor, the vulnerable, and the remote in improved services, official development assistance should be targeted within countries to programs that benefit the poorest. Subsidies should focus on access rather than consumption and should help to attract rather than take the place of community and private resources. Grant-based aid should never go to projects that will primarily benefit the middle- and upper-income groups. For low- and middle-income countries, actors at the international level can play a pivotal role as advocates, catalysts, mobilizers of international support, and sources of additional resources. The framework for this support must be national development planning and budgeting processes that focus on achieving the Millennium Development Goals. There is also a particular need for financial instruments that protect countries from risks, such as adverse currency movements.

Ten critical actions

Meeting the water and sanitation target and optimizing water resources for the Millennium Development Goals by 2015 will require a dramatic scaling-up of efforts—dramatic in terms of both the extent of action required and the speed with which these actions must be undertaken. The financial, governance, and capacity constraints low-income countries face will make this a complicated challenge. Scaling-up service delivery in the poorest countries will require unprecedented short-term action, as well as a focus on building the management systems needed to implement large-scale programs over the medium term and to sustain the gains made over the long term. It will also require a departure from “business as usual” on the part of all key actors, and new approaches that center on decentraliza-

tion, transparency in budgetary allocations, and massive capacity-building efforts right down to the village level.

This dramatic scaling-up of efforts that meeting the ambitious Millennium Development Goals and targets entails will require very significant investments, both in infrastructure and in institutional strengthening and reform, as well as at least 10 complementary actions necessary to underpin them. These 10 actions can be crystallized as follows:

Action 1

Governments and other stakeholders must move the sanitation crisis to the top of the agenda.

“Water supply and sanitation,” occasionally joined by “hygiene,” are words that often appear together in speeches and pronouncements, and indeed this trio belongs together as a cornerstone of public health, as well as social and economic well-being. Sanitation and hygiene, however, somehow disappear during the planning, policymaking, budgeting, and implementation phases, while the lion’s share of effort and resources are allocated to water supply. This needs to change: sanitation and hygiene promotion need to move “front and center” rather than continuing as add-ons to water supply. They are key to development with dignity.

Fundamentally, advocates and sector professionals must not be afraid to tell the plain, ugly truth about what really happens – namely, open defecation. That 42 percent of the world’s people lack what virtually all readers of this report take for granted—a toilet—is a travesty with devastating impacts on peoples’ daily lives, health, and self-respect; we should not be afraid to say so. Here, lessons from the successes in galvanizing global support for the HIV/AIDS epidemic are important; only when policymakers, civil society groups, and the woman and man on the street started speaking openly about how HIV spreads (mainly sexual contact) and how to stop it (condoms, monogamy) did rates of new infection start to decline.

In many cases, countries must approach the challenge of improving sanitation service with different strategies than those employed to expand access to water supply. Expanding sanitation depends not just on building latrines, but also on understanding what motivates people to act in certain ways, and then finding ways to capitalize on those motivations. Mobilization, education, communication, and social marketing, aimed at households, communities, schools, and public authorities are key. The focus needs to be on decisions and investments made



Photo: Mats Lannerstad

at the household and community levels, rather than on installation of hardware. More and different types of people need to be pulled into this effort, including NGOs, women's groups, religious organizations, schools, youth groups, small-scale service providers, and local entrepreneurs; indeed, many "traditional" sanitation service providers will need to create space for more actors to enter, influence, and support the market.

Innovation, pragmatism, and, above all, community solidarity and mobilization must be brought to bear to find local solutions that respond to local needs in an affordable and effective manner. Design of sanitation facilities must respond to user preferences, beliefs, and practices; demand for different technical options; motivations for change; and capacity to maintain facilities in the long term. As in all sound marketing practice, sanitation promotion should take into account the distinct needs and preferences of different consumer groups, such as women and children.

Given the enormous ground to be covered to meet the sanitation target, the hallmarks of sanitation strategies should be maximum scalability, minimum transactions costs, full financial accountability, and closed revenue cycles, along with technical feasibility and operational and environmental sustainability.

Action 2

Countries must ensure that policies and institutions for water supply and sanitation service delivery, as well as for water resources management and development, respond equally to the different roles, needs, and priorities of women and men.

Gender differences and inequalities are fundamental to all efforts aimed at improving water supply, sanitation, and water resources management. Because they shoulder the vast majority of domestic responsibilities, women

and girls suffer disproportionately when water supply and sanitation services are deficient. Across virtually all cultures, women have a greater need than men for facilities that are safe, private, and near their homes. In water resources management and development, women and men often have different priorities; women, for instance, often prioritize water for domestic use and household gardens, while men want water for irrigating cash crops. Women's relative access to and control over water (and other key resources linked to water, such as land, credit, and extension services), as well as gender biases within public institutions, greatly affect the degree to which women can take part in and benefit from water management and development schemes.

Addressing this reality is critical for the effectiveness and sustainability of water and sanitation interventions. In addition, community action and social mobilization around the provision of basic social services like water have been shown to be a valuable entry point for promoting women's empowerment. Having a leadership role in community management of water supplies, for instance, can increase women's social capital as well as their bargaining power within the household. Priority should be given to policies that capitalize on the potential synergy between the water and sanitation target and the gender equality Goal.

Action 3

Governments and donor agencies must simultaneously pursue investment and reforms.

Meeting the water and sanitation target by 2015 will require a dramatic scaling up of efforts—dramatic in terms of both the extent of action required and the speed with which these actions must be undertaken. Waiting for reforms to be implemented before making the necessary investments will make it impossible to meet the 2015 deadline. Over the past decade, donors have often made funding for infrastructure and service delivery contingent upon capacity building and institutional reform. However, in a number of cases, the acquired skills atrophied before the investments materialized, or the "reforms" were merely cosmetic. In other cases, expected official development assistance or funding from private-sector investment in service delivery following institutional reform never appeared.

Allowing reforms and investments to take place simultaneously, which some call "learning by doing," will help address the tension between the desire to have reforms

in place before investments and meet the Millennium Development Goals by the deadline of 2015. It will also ensure that reforms are grounded in reality. This parallel approach could be made contingent upon a credible program of investments and a commitment (at the highest level) to simultaneous reforms.

Introducing reform is a complex effort in which multiple interests must be balanced. A panorama of management models for service provision—public and private—will be required to serve all with adequate water supply and sanitation services. Reforms should enable communities to hold public officials, as well as public and private service providers, accountable for their policies, actions, and use of funds.

Action 4

Efforts to reach the water and sanitation target must focus on sustainable service delivery, rather than construction of facilities alone.

The Millennium Development Goals necessarily focus on measurable targets, such as the proportion of people without access to water supply and sanitation. It is important to remember, however, that water supply and sanitation are services, not simply facilities. The former is a process—requiring the sustained involvement of government, service providers, and households—while the latter is a product that can be delivered in a one-off project. Adopting a service orientation requires attention to financial flows and institutional arrangements for operations and maintenance, as well as incentives for providing safe, reliable services to all customers (including the poor) on a continuing basis. This approach is being contemplated in Brazil, where government has proposed subsidizing service for the poor contingent not on the provision of physical infrastructure, but rather on the supply of reliable service.

This focus on service delivery should also extend to monitoring systems. Monitoring and assessment systems for access to water supply and sanitation services need to be active and adequately resourced from the sub-national to the international level. These systems need to employ valid and reliable measures of access to water supply and sanitation services. More specifically:

- Access to services, rather than to infrastructure, should be at the center of monitoring efforts. The parameters that matter most to users—including the convenience, reliability, sustainability, and adequacy

of water supply and sanitation services—should be measured over time, as should equity of access by women and the poor.

- Monitoring systems should employ a sample survey approach.
- Collected data should be shared in user-friendly formats with NGOs, civic groups, and the public at large as well as with national and international institutions.

Action 5

Governments and donor agencies must empower local authorities and communities with the authority, resources, and professional capacity required to manage water supply and sanitation service delivery.

Water supply and sanitation service delivery should be managed at the lowest appropriate level; however, this devolution of responsibility must be accompanied by corresponding devolution of financial resources and authority, as well as the provision of technical and managerial support to build local capacity.

Decentralization of authority and responsibility to local institutions that lack the requisite technical, managerial, or financial capacity and authority for planning and service delivery can hinder, rather than accelerate, the expansion of sustainable services. Partnerships with local businesses, women's organizations, and other NGOs can be used to help build capacity in local governments and move the service-expansion agenda forward. Civic organizations can help promote accountability through facilitation of information dissemination and citizens' exercise of voice and demand for services. Also important is the careful balance of authority between local institutions and the center—for example, with respect to setting standards and subsidy policies—so that the interests of low-income households are protected. Central governments should take explicit measures to ensure that decentralization of service provision is not captured by local elites; it should rather create incentives for local governments to serve the poor.

There are strong links between local government reform and reforms in water supply and sanitation sectors. The provision of water supply and sanitation services can, in some instances, be pivotal for strengthening local governments. It can also provide an effective entry point for women's participation (action 2) in local political processes, particularly when the equal representation of women in water management is a design feature of programs

and policies. An emphasis on service provision (action 4) implies a greater focus on ongoing management, which depends upon effective local institutions.

Action 6

Governments and utilities must ensure that users who can pay do pay in order to fund the maintenance and expansion of services – but they must also ensure that the needs of poor households are met.

Only service providers that have adequate funds can operate and maintain present systems properly and establish the creditworthiness needed to support service expansion. Closing the revenue gap depends both on reducing costs and increasing revenues. Improving revenue collection can often be achieved simply by charging for what is delivered and collecting bills in a timely manner. Households and communities are capable of making responsible decisions about investments in sustainable water supply and sanitation, and will pay for them if service providers can be held responsible and accountable for the quality of the service they provide. In fact, willingness to charge by governments and service providers is often the limiting factor for adequate revenue generation and resource mobilization. Governments must set an example in their communities by paying their own water bills promptly and in full.

At the same time, governments must recognize that the financial burden of serving the poor cannot be borne by the poor alone. Some poor families and communities simply cannot pay for water supply and sanitation services; carefully targeted subsidies for this group are essential. Where the needs of the poor are not being met because available public resources are being captured by the rich and powerful, appropriate reforms must be implemented. Community-based financing or microfinancing may be a starting point, building a domestic financing system in the process. Governments can also develop financial models for support to nongovernmental and community-based organizations, which can often deliver services at lower costs.

In many areas without access to improved services, however, the financial resources for meeting the Millennium Development Goals must come from outside the communities concerned. Part of the additional funding must come from those already served, using appropriate cross-subsidies; part may come from national income redistribution mechanisms; and part from international donors. In general, subsidizing access (connections in network systems,

for example) has proved to be a more transparent way of targeting the poor as compared to subsidizing consumption (for example, monthly bills). In addition, even in the poorest communities beneficiaries can typically contribute to the costs of improved service through various forms of in-kind contributions. Such contributions engender a sense of ownership necessary for sustainability.

It is also critical to recognize that financial sustainability for water supply and sanitation systems requires discipline within national-level budgeting processes. No system should be built unless it is known how it will be financed—not just the initial capital investment, but also the costs of operation and maintenance. Budgeting processes in general also need to become more transparent. Reduction of corruption at all levels, including in the donor organizations and international agencies, is key.

Action 7

Within the context of national poverty reduction strategies based on the Millennium Development Goals, countries must elaborate coherent water resources development and management plans that will support the achievement of the Goals.

Acting on this recommendation clearly requires that there is a coherent poverty reduction strategy in place from which a water resources development and management plan can be derived. Ideally, an integrated water resources management strategy based on the Goals will entail:

- An assessment of the nature of a country's fresh-water supply from all sources (both surface and groundwater), taking into account key factors as the infrastructure already in place for water abstraction, the water available from shared sources, variability in time and space, and water quality.
- An assessment of the nature of the demand for water resources to meet poverty, hunger, health, and environmental sustainability Goals.
- A coordinated process to reconcile the supply and demand for water resources, one which conforms broadly to the recommendations from the Johannesburg Summit regarding the preparation of integrated water resources management and water efficiency plans by 2005.
- A coherent strategy for the implementation of such plans.

Action 8

Governments and their civil society and private sector partners must support a wide range of water and sanitation technologies and service levels that are technically, socially, environmentally, and financially appropriate.

Supporting a broad range of technological choices allows communities to install the water supply and sanitation infrastructure that they want, are willing to pay for, and can maintain in the long term; it can also lower per-capita costs, thus permitting limited resources to bring service to more households. Hand pumps, improved wells, rainwater harvesting, locally designed latrines, installations using volunteer labor, community maintenance, and the promotion of small-scale independent service providers are examples of "low-tech" approaches that may be particularly relevant and cost-effective for many rural and periurban areas. In some urban settlements, small, locally operated water supply and sanitation systems may be less expensive to construct and maintain than large, centralized systems.

Encouraging the development and use of a range of technologies and services levels helps to resolve the tension between the need for a swift scaling-up of services to meet the 2015 target and the aim of sustaining the gains made over the long term. One-size-fits-all approaches necessarily mean that some households and communities end up getting the "wrong" services, namely, those that are not technically feasible, socio-culturally appropriate, or affordable for users, or that are simply not the types of services that users want. A failure to respond to user preferences and circumstances all but guarantees an eventual failure of the services themselves.

Action 9

Institutional, financial, and technological innovation must be promoted in strategic areas.

Innovation in institutional and financial mechanisms, as well as technological advances in key areas, could accelerate progress toward the water supply target, the sanitation target, and the Millennium Development Goals as a whole.

To meet the water supply and sanitation targets, innovation is particularly needed in the financial, policy, and institutional arenas—such as service delivery systems that help service providers to ensure effective relationships with households and communities, to work with communities, households, local civil society, and private-sector partners,

and to build capacity to innovate and adapt solutions. While most experts agree that a full complement of technologies is now available for safe, reliable water supply in almost any setting, progress toward the sanitation target is still constrained by the lack of technologies that are reliable and affordable enough to implement on a wide scale without having negative impacts on the environmental sustainability target. Technical advances in such areas as effective, affordable, and simple-to-operate sewage treatment plants that can be located close to residential areas; drainage and solid waste disposal; and urban wastewater treatment and management in large urban agglomerations should therefore be promoted and accelerated.

Innovation in financing systems, policies, institutions, and technologies is also needed to accelerate progress toward the Millennium Development Goals as a whole. Win-win technical and institutional systems that advance more than one Goal simultaneously, rather than achieve one goal at the expense of another, are particularly needed. Examples include mechanisms to improve crop per drop and thus both spur progress toward the hunger Goal and reduce the demand for water; and programs for the reuse of waste water in agriculture, which could contribute to both the sanitation and hunger targets.

Action 10

The United Nations system organizations and their member states must ensure that the UN system and its international partners provide strong and effective support for the achievement of the water supply and sanitation target and for water resources management and development.

UN organizations together with their international partners (including international water and sanitation networks and partnerships) must strengthen both their ability to assist and the level of their assistance to countries to meet target 10 and to optimize water resources management and development. This will contribute to the corresponding goal and targets directly and also to all other Millennium Development Goals. Doing so will require that financing, technical support, capacity building, objective analysis, knowledge-sharing, global monitoring and evaluation, and advocacy functions are effectively aligned toward the achievement of the Millennium Development Goals. UN system organizations involved in water and sanitation and their Member States must therefore ensure that the UN system organizations engaged in such functions have, both individually



Photo: Mats Lannerstad

and collectively, the organizational capacity, mandate, staffing, and resources needed to carry out these functions, and to provide leadership and strategic guidance to the international community in these areas.

The UN system organizations and their member states involved in water supply and sanitation and in water resources development and management should take the following actions:

- At the country level, the UN Country Teams should strengthen their efforts to provide technical and capacity-building support to governments, including in the preparation of national Goal-based strategies for water supply and sanitation and for integrated water resources management and water efficiency. UN organizations, development banks, and bilateral donor agencies must also effectively coordinate their actions at the country level, including harmonization of procedures and joint programs.
- At the global level, provision of leadership and strategic guidance to the international community is essential. UN system organizations and key operational actors and others involved in water and sanitation must be involved in this through a clear mechanism, which should build on each organization's strengths and comparative advantages and reduce duplication. UN-Water—with its recently defined mandate and widened participation—should be developed to this end. The WHO/UNICEF Joint Monitoring Programme should be strengthened as the key global mechanism for monitoring access to water supply and sanitation and provided with greater funding. WHO and UNICEF should ensure that arrangements increasingly enable contribution to and participation in the JMP. Bilateral agencies

should both provide more funding and refrain from setting up parallel structures. UN-Water should be mandated to periodically report, through the World Water Development Report (WWDR), hosted by UNESCO, on progress in water resources development and management for the Millennium Development Goals, including progress on the development of strategies for integrated water resources management and efficiency by 2005. UN-Water and WWDR must be strengthened and provided with greater funding to fulfill these roles successfully.

The recently established Secretary-General's Advisory Board on Water and Sanitation should focus on providing high level policy commentary on progress toward the water and sanitation target, advising on strategic direction, identifying critical obstacles to progress, and making recommendations for overcoming them. It should independently and boldly comment on developing country, donor country, and UN system practices, and produce a periodic, brief, focused, high-profile report that would eschew advocacy in favor of pointed recommendations aimed at improving progress within the sector and at advancing the sector's position in the development arena.

The global networks engaged in water and sanitation with the funding agencies supporting must collectively strengthen and rationalize their efforts to provide technical support, capacity-building, objective analysis, knowledge-sharing, and advocacy functions, and align those functions towards the achievement of the Millennium Development Goals, while at the same time, taking steps to ensure they are accountable to the communities of the developing world.

An operational plan

The five guiding principles and 10 actions just described represent, in broad strokes, the vital conditions needed both to achieve the Millennium Development Goals for water supply and sanitation, and to ensure that sound water resources development and management underpins the broader effort all of the Goals. These principles and actions are further elaborated here within an operational plan that specifies the steps that each actor—national and subnational governments, donors, civic and community organizations, and research institutions—must undertake in support of the goals (*tables 4.1 to 4.7*).

Although the operational plan focuses only on actions by actors in the water sector, investments in other sectors,

such as health and education, are crucial to the achievement of the water and sanitation Goals. Progress in eradicating extreme poverty and hunger, achieving universal primary education, promoting gender equality and empowering women, ensuring environmental sustainability, and improving the terms of international trade will all help in advancing progress toward the water and sanitation targets and optimizing water use.

In each table, entries in the operational plan have been categorized into immediate priorities, short-term priorities, and medium-term priorities.

- **National and subnational governments.** National governments have principal responsibility for initiating the planning procedures and policy reforms, as well as for committing the financial and human resources, necessary to achieve the Millennium Development Goals. In addition, efforts by other stakeholder groups are often contingent upon strong initial action by national governments. The proposed operational plan should therefore be spearheaded by the actions that have to be taken by national governments, as outlined in table 4.1. Since some actions, such as setting of standards for water and sanitation technologies, are carried out at the national level in some countries and at the sub-national level in others, we have grouped these actions together in this table, on the assumption that they would be assigned to the responsible parties within a given country. Actions that are typically exclusive to national governments, such as the carrying out of national planning processes, have been noted with an asterisk.
- **Bilateral and multilateral development assistance agencies, regional development banks, and donor agencies and countries.** The task force is unanimous in its belief that target 10 will not be reached unless there is a deliberate commitment by donors to increase and refocus their development assistance and to target sufficient aid to the poorest low-income countries. If the target is to be reached, therefore, fundamental changes by the bilateral and multilateral development agencies, regional development banks, and donor agencies and countries will be required, as detailed in table 4.2.
- **The United Nations system.** As emphasized in previous chapters, the United Nations system organizations and their member states must ensure that the UN system with its international partners provide

strong and effective support for the achievement of the water supply and sanitation target and for water resources management and development. The actions that have to be taken by the United Nations system organizations and their member states are outlined in table 4.3.

- **Other national and international actors.** The actions to be undertaken by other key actors – service providers, civic and community organizations, international networks and partnerships, and research organizations—are outlined in tables 4.4 to 4.7.

Other important actions that should be undertaken by all actors on a continual basis—both during the Millennium Development process and beyond—have been identified in table 4.8.

The task force recommends that all organizations engaged in the effort to achieve the Millennium Development Goals—from national and subnational governments to donors to NGOs—should themselves prepare an operational plan to focus their support on the achievement of the Goals. The WSSCC, for instance, has undertaken such an exercise.

There is still time for the world as a whole to meet target 10—but only just. 2005 is a critical year; it must be the start of a decade of bold action and swift progress. If the global community fails to act urgently, target 10 will be nothing more than a broken promise, another missed opportunity. But if stakeholders at the community, national, and international levels can join together in this common cause, the heartbreakingly simple dream of safe water to drink and private, clean sanitation to use can become a reality for literally millions of girls and boys, women and men, in urban slums and rural hamlets across the world.



Photo: Mats Larnerstad

To reach target 10

Immediate priority actions	Short-term priority actions	Medium-term priority actions
<ul style="list-style-type: none"> • Ensure that water supply and sanitation are included in national planning processes, especially Poverty Reduction Strategy Papers. • Undertake assessments of water and sanitation infrastructure endowments and deficits. • Create a national-level "institutional home" for sanitation. • Obtain current, accurate information about the characteristics of unserved households, so that appropriate policies to expand access to these households are pursued. • Review and modify subsidy policies as necessary to ensure that improved water and sanitation services are affordable to the poor, and subsidies are provided only to low-income households. • Prioritize activities and programs that raise the profile of and demand for improved sanitation. 	<ul style="list-style-type: none"> • Monitor changes over time to gauge the effectiveness of interventions and the impact of policy reforms and investments at national and subnational levels. • Ensure that appropriate, flexible standards for water, sanitation, and wastewater treatment technologies are in place. • Initiate policy reforms that improve the financial and technical sustainability of water and sanitation service provision, such as tariff reforms, "ring fencing," and adequate support for ongoing operations and maintenance. • Initiate policy reforms to attract financing to, and facilitate efficient use of human and financial resources in water and sanitation service delivery. • Initiate policy reforms that improve the accountability of service providers, such as the establishment and funding of credible regulatory institutions, reform of civil-service legislation, and limiting political interference in decisionmaking. 	<ul style="list-style-type: none"> • Monitor changes over time to gauge the effectiveness of interventions and the impact of policy reforms and investments at national and subnational levels. • Remove barriers to service provision in unregularized areas. • Shift principal control over water and sanitation planning and service delivery to local administrations, including budgetary authority. • Support decentralization by retaining strong oversight and support functions, particularly with respect to ensuring access to services by poor households. • Provide funding to support community mobilization and organization for actions towards the water and sanitation targets.

To improve water resources management for all the Goals

Immediate priority actions	Short-term priority actions	Medium-term priority actions
<ul style="list-style-type: none"> • Support Goals-based planning and policy development by an integrated approach to land, water, and ecosystems. • Use the action target set by WSSD in Johannesburg for countries to develop IWRM and water efficiency strategies by 2005 as an opportunity to infuse Goals planning processes with consideration of water resources. • Develop a coherent approach toward deciding on the investments in water resources infrastructure and management needed to meet the Millennium Development Goals. 	<ul style="list-style-type: none"> • Monitor changes over time to gauge the effectiveness of interventions and the impact of policy reforms and investments at national and subnational levels. • Define and promote strategies that will contribute to multiple Goals and avoid strategies that create conflicts among them. 	<ul style="list-style-type: none"> • Monitor changes over time to gauge the effectiveness of interventions and the impact of policy reforms and investments at national and subnational levels. • Disseminate small-scale water technologies to provide livelihoods to small and landless farmers, while addressing the hunger and environment Goals. • Reduce the vulnerability of communities to water-related natural disasters by land reform, infrastructure construction for water storage and flood protection, and improved land-use planning, including slum upgrading. • Invest in community-based natural resource management, including urban agriculture, for hunger, poverty, and environment Goals.

Table 4.1. Priority actions for national and subnational governments



Immediate priority actions	Short-term priority actions	Medium-term priority actions
<ul style="list-style-type: none"> • Increase current aid in the water and sanitation sector to levels commensurate with the costs of attaining the water and sanitation target in the poorest countries. • Redirect aid to the poorest countries and, within countries, toward programs that provide basic services for poor households. • Prioritize investments in basic sanitation and hygiene. • Reform aid procedures, so that aid supports policy reforms and infrastructure investment simultaneously, thereby enhancing institutional and policy frameworks while expanding services. • Increase funding to Joint Monitoring Programme and refrain from setting up parallel structures. 	<ul style="list-style-type: none"> • Substantially accelerate the process for making aid available, and simplify the procedures for allocating aid. • Prioritize investments in programs that help “crowd in” community and private resources to benefit the poor, as well as initiatives that have the potential to yield results at scale. • Use the upcoming second Water Decade, 2005-15 (“Water for Life”), to mobilize international awareness and political commitment to sound water resources management and expansion of water and sanitation services to meet the Millennium Development Goals. 	<ul style="list-style-type: none"> • Support initiatives that seek to encourage more open and frank discussion of sanitation needs and practices. • Promote and finance research and development that fosters innovations in appropriate technologies, social marketing, and institutional arrangements that improve access to water and sanitation services by the poor. • Promote initiatives that address multiple Millennium Development Goals. • Support, where useful, the creation of new, regional-level multilateral donor mechanisms such as the African Water Facility.

Table 4.2. Priority actions for bilateral and multilateral development assistance agencies



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Immediate priority actions	Short-term priority actions	Medium-term priority actions
<ul style="list-style-type: none"> • Strengthen UN country team efforts to provide technical and capacity-building support to governments. • Effectively coordinate actions at the country level, including harmonization of procedures and joint programs, both within the UN system and with development banks and bilateral donor agencies. • Support the Joint Monitoring Programme as the key global mechanism for monitoring sustainable access to water and sanitation and provide it with the necessary resources to carry out its work. 	<ul style="list-style-type: none"> • Expand monitoring efforts to include information on the actions and investments undertaken by the international community toward meeting the Goals, as well as on the impacts of those activities. • Use the upcoming second Water Decade, 2005–15 (“Water for Life”), to mobilize international awareness and political commitment to sound water resources management and expansion of water and sanitation services to meet the Millennium Development Goals. • Ensure the independence and adequate funding of the Advisory Board on Water and Sanitation as a means of achieving high-level strategic focus among the international community. • Focus the Secretary-General’s Advisory Board on Water and Sanitation on providing high-level policy commentary on progress toward the water and sanitation target. • Ask the Secretary-General’s Advisory Board on Water and Sanitation to comment independently and boldly on developing country, donor country, and UN system practices, and produce a periodic, brief, focused, high-profile report with pointed recommendations. 	<ul style="list-style-type: none"> • Develop clear mechanism to provide leadership and strategic guidance to the international community. • Mandate UN-Water to periodically report through World Water Development Report on progress in water resources development and management for the Goals, including progress on the development of IWRM strategies by 2005. • Strengthen UN-Water and WWDR and provide with greater funding to fulfill these roles successfully. • Reform monitoring systems such that they measure access to sustainable services, rather than the presence of particular infrastructure. • Support the use of scientific sampling and household surveys for water and sanitation monitoring. • Ensure that data collected in global monitoring is widely disseminated in “user friendly” formats. • Support initiatives that seek to encourage more open and frank discussion of sanitation needs and practices.

Table 4.3. Priority actions for the United Nations system

Immediate priority actions	Short-term priority actions	Medium-term priority actions
<ul style="list-style-type: none"> • Support and lobby for policy reforms in water and sanitation subsidies, so that benefits are targeted to poor households. • Support and lobby for policy reforms in water and sanitation tariffs, so that service provision becomes financially sustainable. 	<ul style="list-style-type: none"> • Seek out opportunities for partnerships with civic organizations that can improve access to water and sanitation services by poor households. • Revise budgets and institutional incentive structures, so that sustainable operations and maintenance of installed infrastructure receives sufficient priority and resources. 	<ul style="list-style-type: none"> • Pursue innovative strategies, including lower cost appropriate technologies, to expand services to unregularized settlements.

Table 4.4. Priority actions for service providers



Immediate priority actions	Short-term priority actions	Medium-term priority actions
<ul style="list-style-type: none"> • Prioritize activities and programs that raise the profile of and demand for improved sanitation. • Use accurate information – the end product of reliable monitoring efforts – as a powerful advocacy tool for change. 	<ul style="list-style-type: none"> • Develop strategies for encouraging more open and frank discussion of sanitation needs and practices. • Seek out opportunities for partnerships with service providers that improve access to water and sanitation services by poor households. • Share information and experiences with service providers, as well as with subnational and national governments, seeking to better understand the characteristics of and obstacles faced by unserved households. 	<ul style="list-style-type: none"> • Help to identify strategies for ensuring access to services by poor households while also maintaining financial sustainability for service providers. • Help to hold service providers and governments accountable for expanding and improving water and sanitation services to the poor through audits, public information campaigns, etc.

Table 4.5. Priority actions for civic and community organizations

Immediate priority actions	Short-term priority actions	Medium-term priority actions
<ul style="list-style-type: none"> • Raise public awareness of the deficits in coverage and quality of water supply and sanitation services through public statements, articles, events, celebrity endorsements, and other innovative strategies. • Test, refine, and publicize effective strategies for water and sanitation service delivery to the poor that have the potential to yield results at scale. • Collectively strengthen and rationalize efforts and align them towards the achievement of the Goals while at the same time taking steps to ensure accountability to the communities of the developing world. • Use accurate information – the end product of reliable monitoring efforts – as a powerful advocacy tool for change. 	<ul style="list-style-type: none"> • Use the upcoming second Water Decade, 2005–15 ("Water for Life"), to mobilize international awareness and political commitment to sound water resources management and expansion of water and sanitation services to meet the Millennium Development Goals. • Publicly support policy reforms that better target subsidies to poor households, promote sustainability of service delivery, and heighten accountability of service providers to households. • Support initiatives that seek to encourage more open and frank discussion of sanitation needs and practices. 	<ul style="list-style-type: none"> • Help to hold service providers and governments accountable for expanding and improving water and sanitation services to the poor through audits, public information campaigns, etc. • Package and disseminate information collected in national and international monitoring efforts such that it is accessible to community organizations, the media, and the general public. • Explore ways to use the new UN ECOSOC affirmation of the Right to Water to influence national policy on water and sanitation.

Table 4.6. Priority actions for international networks and partnerships



Immediate priority actions	Short-term priority actions	Medium-term priority actions
<ul style="list-style-type: none">• Better document and communicate the economic benefits of improved water and sanitation services.• Conduct research and disseminate findings on effective strategies for providing sustainable water supply and sanitation services in persistently challenging settings (unregularized urban communities, small towns, poor rural villages).	<ul style="list-style-type: none">• Support the development of appropriate technical standards for water supply, sewerage, and sewage treatment.• Increase research and development on technologies and institutional innovations aimed at meeting several Goals simultaneously and reducing tradeoffs among the uses of water resources to meet the various Goals.• Develop new sanitation technologies to reuse wastewater for periurban agriculture.• Develop a conceptual framework for defining and measuring the contribution of water resources development and management to the Millennium Development Goals.	<ul style="list-style-type: none">• Carry out research and development of appropriate, affordable sanitation technologies.

Table 4.7. Priority actions for research organizations

<ul style="list-style-type: none">• Prepare an operational plan that outlines what they will do during the period 2005–15 to help achieve target 10 and the development and management of water resources for the Millennium Development Goals.• Maintain a focus on sustainability to ensure that gains made in expanding access to water and sanitation services and improving water resources management during the Millennium Development process will be maintained in the long term.• Incorporate gender considerations into policy recommendations and program design; address gender biases within their own institutions.• Take measures to reduce corruption at all levels, whether in donor organizations, international agencies or companies, or public, private, or civic institutions in developing countries.
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Table 4.8. Priority actions for all actors throughout the Millennium Development process and beyond



Photo: Mats Larmerstad

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UN Millennium Development Goals

Goal 1: Eradicate extreme poverty and hunger

Target 1 Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day

Target 2 Halve, between 1990 and 2015, the proportion of people who suffer from hunger

Goal 2: Achieve universal primary education

Target 3 Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling

Goal 3: Promote gender equality and empower women

Target 4 Eliminate gender disparity in primary and secondary education, preferably by 2005, and to all levels of education no later than 2015

Goal 4: Reduce child mortality

Target 5 Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate

Goal 5: Improve maternal health

Target 6 Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio

Goal 6: Combat HIV/AIDS, malaria and other diseases

Target 7 Have halted by 2015 and begun to reverse the spread of HIV/AIDS

Target 8 Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases

Goal 7: Ensure environmental sustainability

Target 9 Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources

Target 10 Halve, by 2015, the proportion of people without sustainable access to safe drinking water and sanitation

Target 11 By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers

Goal 8: Develop a Global Partnership for Development

Target 12 Develop further an open, rule-based, predictable, non-discriminatory trading and financial system [Includes a commitment to good governance, development, and poverty reduction – both nationally and internationally]

Target 13 Address the Special Needs of the Least Developed Countries [Includes: tariff and quota free access for LDC exports; enhanced programme of debt relief for HIPC and cancellation of official bilateral debt; and more generous ODA for countries committed to poverty reduction]

Target 14 Address the Special Needs of landlocked countries and small island developing States (through the Programme of Action for the Sustainable Development of Small Island Developing States and the outcome of the 22nd special session of the General Assembly)

Target 15 Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term

Target 16 In co-operation with developing countries, develop and implement strategies for decent and productive work for youth

Target 17 In co-operation with pharmaceutical companies, provide access to affordable, essential drugs in developing countries

Target 18 In co-operation with the private sector, make available the benefits of new technologies, especially information and communications

Source: www.unmillenniumproject.org



MillenniumProject

Health, Dignity, and Development: What Will It Take?

The UN Millennium Project is an independent advisory body commissioned by the UN Secretary-General to propose the best strategies for meeting the Millennium Development Goals (MDGs). The MDGs are the world's targets for dramatically reducing extreme poverty in its many dimensions by 2015 – income poverty, hunger, disease, exclusion, lack of infrastructure and shelter – while promoting gender equality, education, health, and environmental sustainability. Ten Millennium Project task forces, including one on Water and Sanitation, were charged with identifying what it would take to achieve the Goals.

In this abridged version of its report, the Task Force outlines the bold yet practical actions needed to increase access to water and sanitation. The report underscores the need to focus on the global sanitation crisis, which

contributes to the death of 3,900 children each day, to increase access to domestic water supply, and to invest in integrated development and management of water resources. All are necessary for countries to reduce poverty and hunger, improve health, advance gender equality, and ensure environmental sustainability.

Implementing the recommendations of this report will allow all countries to halve the proportion of people without access to safe water and sanitation by 2015.

This abridged report was prepared by the UN Millennium Project Task Force on Water and Sanitation and published by the Swedish Water House, an initiative of the Government of Sweden which supports international policy development and co-operation on water. The full report is available at www.unmillenniumproject.org.



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